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WATER SUPPLY OUTLOOK FOR WASHINGTON

U. S. DEPT. OF AGRICULTURE
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MAY 22 1967
CURRENT SERIAL RECORDS

and

FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

UNITED STATES DEPARTMENT of AGRICULTURE···SOIL CONSERVATION SERVICE.

and

DEPARTMENT of CONSERVATION STATE of WASHINGTON

Data included in this report were obtained by the agencies named above in cooperation with the U.S. Forest Service, U.S. Geological Survey, National Park Service, and other Federal, State and Private organizations.

AS OF
APR. 1, 1967

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season as they affect runoff will add to be an effective average. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1400 snow courses in Western United States and in the Columbia Basin in British Columbia. In the near future, it is anticipated that automatic snow water equivalent sensing devices along with radio telemetry will provide a continuous record of snow water equivalent at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data or reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

Listed below are water supply outlook reports based on Federal-State-Private Cooperative snow surveys. Those published by the Soil Conservation Service may be obtained from Soil Conservation Service, Room 507, Federal Building, 701 N. W. Glisan, Portland, Oregon 97209.

PUBLISHED BY SOIL CONSERVATION SERVICE

D. A. WILLIAMS, Administrator

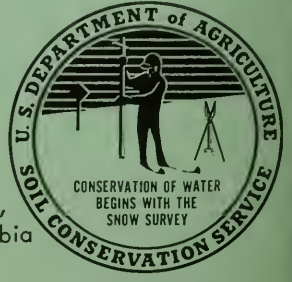
The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 507, 701 N. W. Glisan, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	P. O. Box "F", Palmer, Alaska 99645
Arizona	6029 Federal Building, Phoenix, Arizona 85205
Colorado (N. Mex.)	12417 Federal Building, Denver, Colorado 80202
Idaho	P. O. Box 38, Boise, Idaho 83701
Montana	P. O. Box 855, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4001 Federal Building, Salt Lake City, Utah 84111
Washington	840 Bon Marche Bldg., Spokane, Washington 99206
Wyoming	P. O. Box 340, Casper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



FEDERAL-STATE-COOPERATIVE
SNOW SURVEY AND WATER SUPPLY FORECASTS

For

WASHINGTON

Report Prepared
By

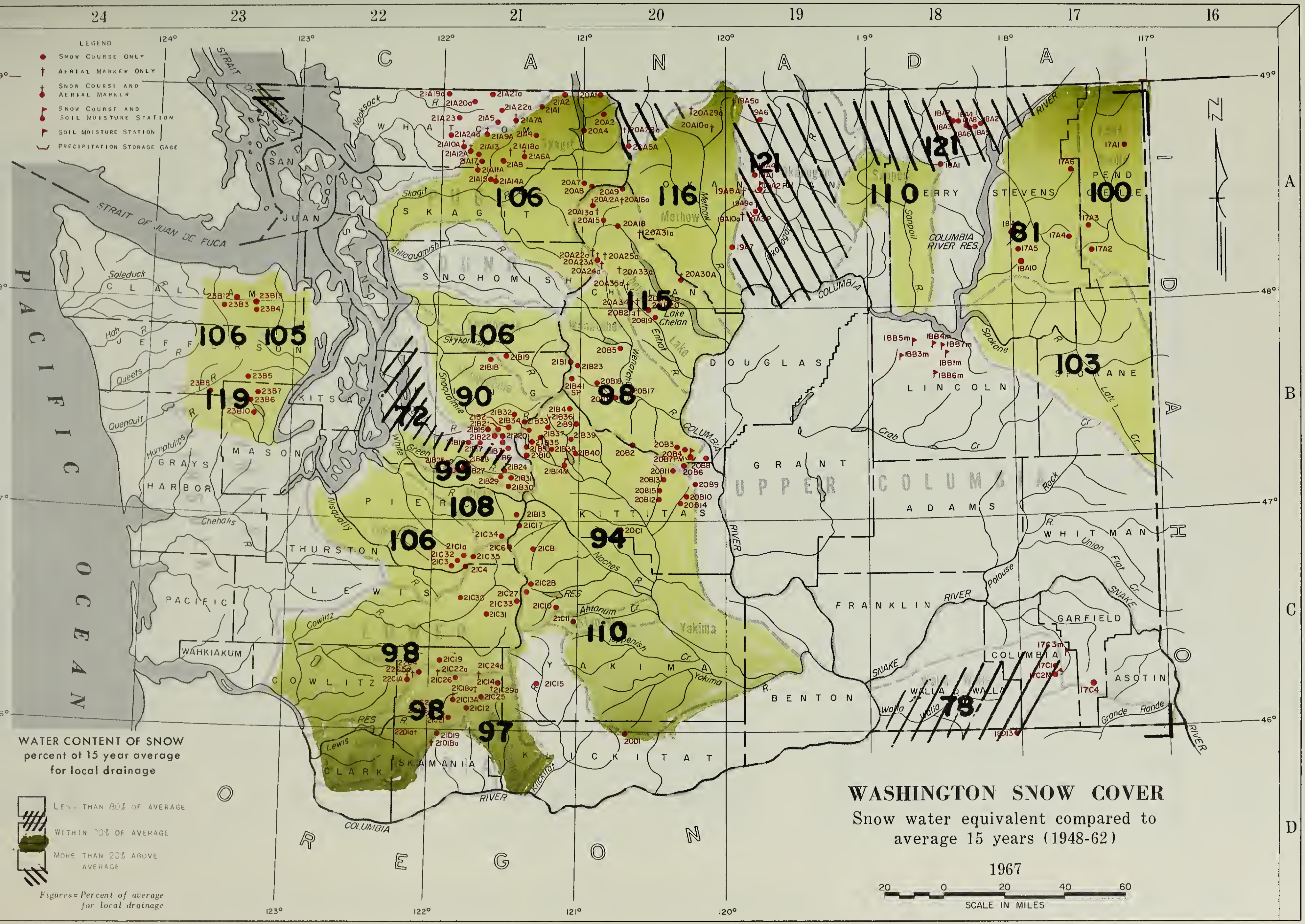
Robert T. Davis, Snow Survey Supervisor

Soil Conservation Service
840 Bon Marche Building
Spokane, Washington

Issued By

Orlo W. Krauter
State Conservationist
Soil Conservation Service
U. S. Department of Agriculture

H. W. Pollock, Supervisor
Division of Water Resources
Department of Conservation
State of Washington


WASHINGTON SNOW COVER
Snow water equivalent compared to average 15 years (1948-62)
1967
SCALE IN MILES
LEGEND
Snow Course Only
Aerial Marker Only
Snow Course and Aerial Marker
Snow Course and Soil Moisture Station
Soil Moisture Station
Precipitation Storage Gage
WATER CONTENT OF SNOW
percent of 15 year average
for local drainage
Less than 80% of average
Within 20% of average
More than 20% above average
Figures = Percent of average for local drainage
PACIFIC OCEAN
CANADA
IDAHO
OREGON
STRAIT OF JUAN DE FUCA
UPPER COLUMBIA
100
103
81
121
110
121
116
115
106
106
105
106
119
90
98
72
99
108
106
94
110
98
98
97
78

INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

UPPER COLUMBIA DRAINAGE

Pend Oreille River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Boyer Mountain	17A2	7	31N	43E	5250
Bunchgrass Meadow	17A1	24	33N	44E	5000
Winchester Creek	17A3	30	33N	43E	2900

Kettle River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Boulder Road	18A2	36	39N	36E	1450
Butte Creek	18A3	28	39N	35E	4070
Cabin Creek	18A8	5	38N	36E	3170
Goat Creek	18A4	26	39N	35E	3595
Snow Caps Creek	18A5	3	38N	36E	2150
Snow Caps Trail	18A6	5	38N	36E	2720
Summit G. S.	18A7	20	39N	35E	4600

Colville River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Baird	17A6	19	36N	42E	3215
Carlson	18A9	34	32N	38E	2885
Chewelah	17A4	11	32N	41E	4025
Stranger Mountain	17A5	26	31N	38E	4090
Togo	18A10	6	29N	38E	3370

Sanpoil River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Sherman Creek Pass	18A1	19	36N	35E	5350

Okanogan River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Clark	19A8a	2	36N	23E	7000
Muckamuck	19A9a	20	36N	24E	6750
Mutton Creek No. 1	19A1	30	37N	24E	5700
Mutton Creek No. 2	19A4	19	37N	24E	6000
Paysayten	20A28a	32	40N	18E	4300
Rusty Creek	19A3P	18	35N	24E	4000
Salmon Meadows	19A2PM	33	37N	24E	4500
Starvation Mtn.	19A10a	15	35N	23E	6750
Touts Coulee	19A6	30	39N	25E	2845

Methow River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Billy Goat Pass	20A10a	10	38N	20E	6400
Dollar Watch	20A29a	8	39N	20E	7000
Harts Pass	20A5A	7	37N	18E	6500
Horseshoe Basin	19A5a	15	40N	23E	7000
Loup Loup	19A7	36	34N	23E	4650

Chelan Lake Basin

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Cloudy Pass	20A22a	12	31N	15E	6500
Greenwood Flat	20A25a	3	31N	16E	3540
Little Meadows	20A24a	8	31N	16E	5275
Lyman Lake	20A23a	18	31N	16E	5900
Park Creek Flat	20A13a	18	34N	16E	2220
Park Creek Ridge	20A12A	7	34N	16E	4600
Petersons	20A16a	3	34N	17E	3730
Rainy Pass	20A9	21	35N	17E	4780
Safety Harbor	20A30A	32	31N	20E	6300
War Creek Pass	20A31a	34	33N	18E	6500

Entiat River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Brief	20B19	34	28N	19E	1600
Entiat Meadows	20A33a	28	31N	17E	4800
Entiat River Trail	20A34a	2	29N	17E	3150
Pope Ridge	20B20	22	29N	18E	4300
Pugh Ridge	20A32a	34	30N	18E	6400
Snow Brushy	20A35a	21	30N	17E	3850
Tommy Creek	20B21a	10	28N	18E	5300

Wenatchee River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Berne-Mill Creek	21B23	7	26N	15E	2925
Berne-Mill Creek (New)	21B41SP	13	26N	14E	3240
Blewett Pass No. 2	20B2	35	22N	17E	4270
Chiwaukum C. S.	20B16	4	25N	17E	1810
Lake Wenatchee	20B5	33	27N	17E	1970
Leavenworth R. S.	20B17	1	24N	17E	1127
Merritt	20B18	4	26N	16E	2140
Stevens Pass	21B1	14	26N	13E	4070

Squilchuck Creek

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Beehive Springs	20B3	12	21N	19E	4400
Scout-A-Vista	20B4	18	21N	20E	3400

Stemilt Creek

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Jump-Off	20B8	34	21N	20E	4450
Stemilt Slide	20B6	30	21N	20E	5000
Upper Wheeler	20B7PM	30	21N	20E	4400

Crab Creek

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Creston-Kuns	18B1m	32	27N	34E	2440
Jack Woods	18B3m	28	27N	31E	2750
Krause	18B4m	21	27N	33E	2420
Sheffels	18B5m	17	27N	32E	2378
Sherman	18B7m	24	27N	33E	2440
Wheatridge	18B6m	24	25N	32E	2290

Yakima River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Ahtanum R. S.	21C11	26	12N	14E	3100
Big Boulder Creek	21B9	35	23N	14E	3200
Bumping Lake	21C8	23	16N	12E	3450
Clockum Pass	20B9	25	20N	20E	5370
Cooke Creek	20B10	17	19N	20E	4123
Cooper Pass	21B36	33	23N	13E	3300
Fish Lake	21B4	34	24N	14E	3371
Green Lake	21C10	3	12N	13E	6000
Grouse Camp	20B11	29	21N	19E	5385
High Creek	20B12	34	20N	19E	2930
Hyak	21B34	15	22N	11E	2600
Kachess Dam	21B38	34	21N	13E	2220
Kachess Peninsula	21B37	32	22N	13E	2280
Lake Cle Elum	21B14M	15	20N	14E	2200
Manashtash	20C1	24	17N	16E	3935
Morgan Creek	21B40	9	21N	14E	2320
Morse Lake	21C17	6	16N	11E	5400
Nanum	20B13	4	20N	19E	3875
Noble Creek	21B35	10	21N	12E	2520
Salmon La Sac	21B39	16	22N	14E	2340
Snoqualmie Pass	21B33	4	22N	11E	3020
Trail Creek	20B14	20	19N	20E	3360
Tunnel Avenue	21B8	13	21N	11E	2450
Walters Flat	20B15	22	20N	19E	3360
White Pass (East Side)	21C28	2	13N	11E	4500
White Pass (Leach Lake)	21C27	1	13N	11E	4500

LOWER COLUMBIA DRAINAGE

Asotin Creek

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Spruce Springs	17C4	9	8N	42E	5700

Mill Creek

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Couse	17C3m	2	9N	35E	3370
Homestead	17C1	11	9N	40E	4030
Martin Springs (Helmers SM)	17C2M	23	9N	40E	4400
Walla Walla Diversion	18D13	22	6N	38E	2400

Klickitat River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Satus Pass	20D1	21	6N	17E	4030
West Fork Cabin	21C15	23	9N	12E	3000

White Salmon River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Cultus Creek	21C12	35	7N	8E	4000

Lewis River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Blue Lake	21C22a	19	9N	8E	4800
Bob's Trail	21C21	25	8N	7E	2200
Calamity Ridge	22D1a	8	5N	5E	2500
Council Pass	21C18a	24	9N	9E	4200

Lewis River (continued)

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Divide Meadow	21C29a	21	9N	10E	5600
Grand Meadow	21C25	28	8N	9E	3500
Lone Pine Shelter	21C26	8	9N	7E	3800
Marble Mountain	22C5a	24	8N	5E	3200
New Muddy River	22C6	36	8N	6E	2000
Oldman Pass	21D19	22	6N	7E	3100
Plains of Abraham	22C1a	35	9N	5E	4400
Smith Creek Road	22C4	29	9N	6E	2100
Spencer Meadow	21C20s	16	8N	7E	3400
Surprise Lakes	21C13A	14	7N	8E	4250
Table Mountain	21C24a	20	9N	9E	4200
Timbered Peak	21D18a	36	6N	6E	3000

Cowlitz River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Cayuse Pass	21C6	15	16N	10E	5300
Mosquito Meadows	21C19	33	10N	7E	4100
Ohanapecosh	21C32	28	15N	10E	2200
Packwood Lake	21C31	21	13N	10E	2870
Pigtail Peak	21C33	11	13N	11E	5900
Potato Hill	21C14	36	10N	10E	4500
Willame Creek	21C30	3	13N	8E	3250

PUGET SOUND DRAINAGE

Nisqually River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Ghost Forest	21C4	23	15N	8E	4550
Longmire	21C3	29	15N	8E	2760
Paradise Park (New)	21C35	13	15N	8E	
Stem Clade	21C1	13	15N	8E	5050

White River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Corral Pass	21B13	30	18N	11E	6000
White River Campground	21C34	4	16N	9E	

Green River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Airstrip	21B24	18	20N	11E	1800
Charley Creek	21B25	27	21N	8E	1200
Grass Mountain No. 1	21B26	21	20N	8E	4000
Grass Mountain No. 2	21B27	14	20N	8E	2900
Grass Mountain No. 3	21B28	12	20N	8E	2100
Lester Creek	21B29	36	20N	10E	3100
Sawmill Ridge	21B31	5	19N	11E	4700
Stampede Pass	21B10	25	21N	11E	3000
Twin Camp	21B30	18	19N	11E	4100

Cedar River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
City Cabin	21B3	10	21N	10E	2390
Mt. Gardner	21B21	30	22N	10E	3300
Mt. Gardner Aux.	21B22	31	22N	10E	2500
Mt. Lindsay	21B16	31	22N	9E	2500
Mt. Washington	21B15	8	22N	9E	3000
Rex River	21B17	11	21N	9E	2400
South Fork Cedar	21B6	24	21N	10E	3000
Tinkham Creek	21B20	1	21N	10E	3400

Snoqualmie River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Bandera Air Strip	21B32	16	22N	10E	1635
Olallie Meadows	21B2	19	22N	11E	3625
South Fork Tolt	21B18	26	26N	9E	1900

Skykomish River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Lake Elizabeth	21B19	33	26N	10E	2900

Skagit River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Beaver Creek Trail	21A4	35	39N	12E	3200
Beaver Pass	21A1	9	39N	12E	3680
Devils Park	20A4	34	38N	10E	5900
Freezeout Creek Trail	20A1	14	40N	14E	3500
Freezeout Meadows	20A2	8	40N	14E	5000
Lake Hozomeen	21A2	19	40N	14E	2600
Meadows Cabins	20A8	29	36N	14E	1900
Thunder Basin	20A7	15	35N	14E	4200

Baker River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Dock Butte	21A11A	8	36N	8E	3800
Easy Pass	21A7A	19	39N	11E	5200
Jasper Pass	21A6A	17	38N	11E	5400
Marten Lake	21A9A	23	38N	8E	3600
Mount Blum	21A18a	27	38N	10E	5800
Rocky Creek	21A12A	20	37N	8E	2100
Schreibers Meadow	21A10A	18	37N	8E	3400
S. F. Thunder Creek	21A14A	20	36N	9E	2200
Sulphur Creek	21A13	22	37N	8E	1600
Three Mile Creek	21A15	18	36N	9E	1600
Watson Lakes	21A8	25	37N	9E	4500

Nooksack River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Bald Mountain	21A19a	7	40N	7E	4400
Canyon	21A20A	20	40N	8E	5100
Clacier Creek	21A23	9-10	38N	7E	3700
Hannegan Pass	21A22a	8	39N	9E	5000
Mazama Park	21A24a	2	37N	7E	4500
Panorama	21A5	17	39N	9E	4300
Twin Lakes	21A21a	16	40N	9E	5200

OLYMPIC PENINSULA

Dungeness River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Deer Park	23B4	1	28N	5W	5200

Morse Creek

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Deer Park G. S.	23B13	1	28N	5W	4850
Morse Creek	23B12	25	29N	7W	5425

Elwha River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Hurricane	23B3	36	29N	7W	4500

Skokomish River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Black and White	23B7	17	24N	5W	4200
Black and White Lakes	23B6	16	24N	5W	4700
Four Stream	23B10	1	23N	6W	3000
Home Sweet Home	23B5	28	25N	5W	5200
Sundown Pass	23B8	25	24N	7W	3900

LEGEND

NUMBERING SYSTEM EXAMPLE

21A7 SNOW COURSE ONLY

21A7a AERIAL MARKER ONLY

21A7A SNOW COURSE AND AERIAL MARKER

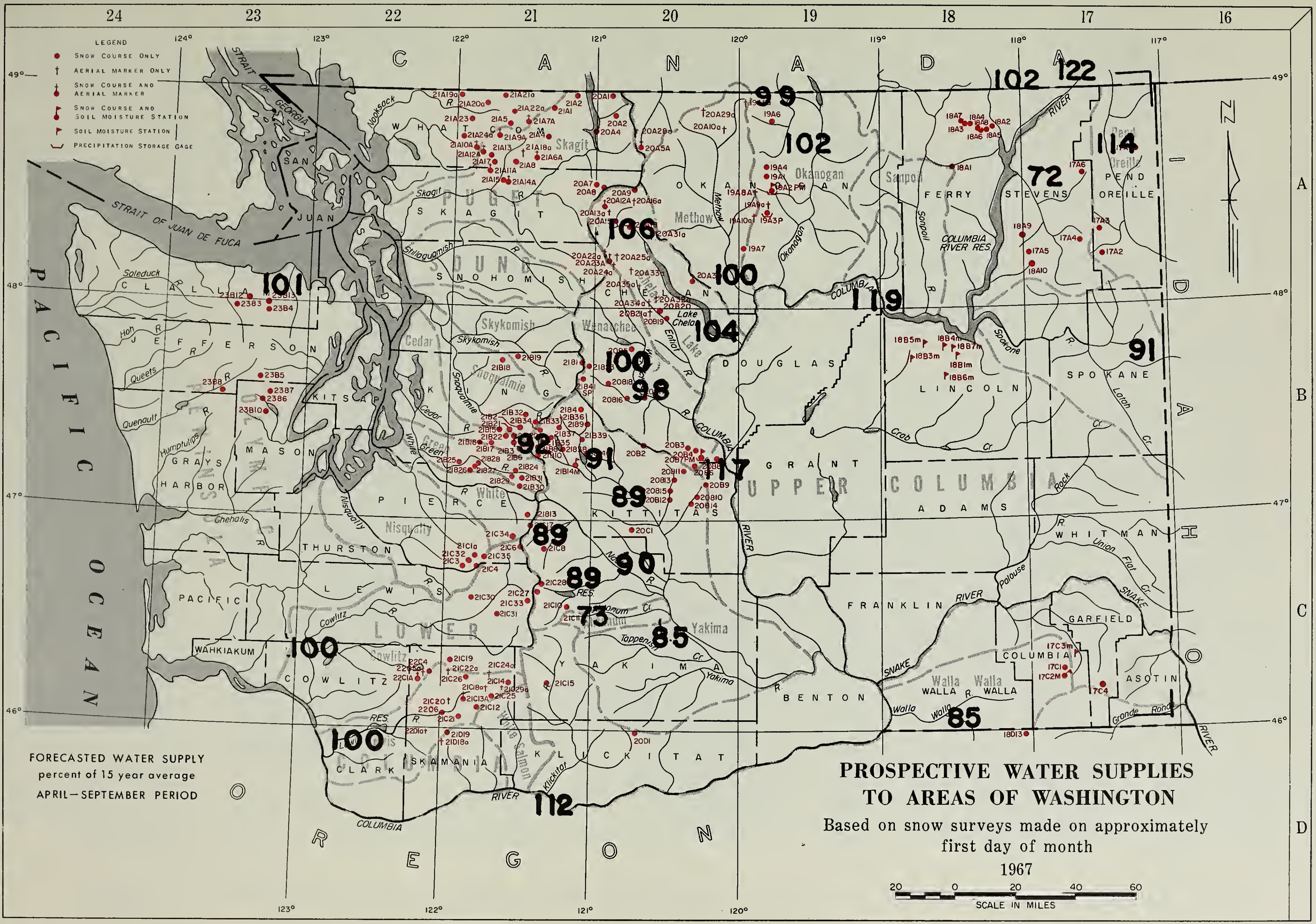
21A7M SNOW COURSE AND SOIL MOISTURE STATION

21A7m SOIL MOISTURE STATION

21A7P SNOW COURSE AND PRECIPITATION STORAGE GAGE

21A7p PRECIPITATION STORAGE GAGE

21A7SP SNOW PILLOW



PROSPECTIVE WATER SUPPLIES TO AREAS OF WASHINGTON

Based on snow surveys made on approximately first day of month

1967

7-0-14987-1

INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

UPPER COLUMBIA DRAINAGE

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Lake Wenatchee	20B5	33	27N	17E	1970
Leavenworth R. S.	20B17	1	24N	17E	1127
Merritt	20B18	4	26N	16E	2140
Stevens Pass	21B1	14	26N	13E	4070
Squilchuck Creek					
Beehive Springs	20B3	12	21N	19E	4400
Scout-A-Vista	20B4	18	21N	20E	3400
Stemilt Creek					
Jump-Off	20B8	34	21N	20E	4450
Stemilt Slide	20B6	30	21N	20E	5000
Upper Wheeler	20B7PM	30	21N	20E	4400
Crob Creek					
Creston-Kunz	18B1m	32	27N	34E	2440
Jack Woods	18B3m	28	27N	31E	2750
Krause	18B4m	21	27N	33E	2420
Sheffels	18B5m	17	27N	32E	2378
Sherman	18B7m	24	27N	33E	2440
Wheatridge	18B6m	24	25N	32E	2290
Yakima River					
Ahtanum R. S.	21C11	26	12N	14E	3100
Big Boulder Creek	21B9	35	23N	14E	3200
Bumping Lake	21C8	23	16N	12E	3450
Clockum Pass	20B9	25	20N	20E	5370
Cooke Creek	20B10	17	19N	20E	4123
Cooper Pass	21B36	33	23N	13E	3300
Fish Lske	21B4	34	24N	14E	3371
Green Lake	21C10	3	12N	13E	6000
Grouse Camp	20B11	29	21N	19E	5385
High Creek	20B12	34	20N	19E	2930
Hyak	21B34	15	22N	11E	2600
Kachess Dam	21B38	34	21N	13E	2220
Kschess Peninsula	21B37	32	22N	13E	2280
Lake Cle Elum	21B14M	15	20N	14E	2200
Manashtash	20C1	24	17N	16E	3935
Morgan Creek	21B40	9	21N	14E	2320
Morse Lake	21C17	6	16N	11E	5400
Nanum	20B13	4	20N	19E	3875
Noble Creek	21B35	10	21N	12E	2520
Salmon La Sac	21B39	16	22N	14E	2340
Snoqualmie Pass	21B33	4	22N	11E	3020
Trail Creek	20B14	20	19N	20E	3360
Tunnel Avenue	21B8	13	21N	11E	2450
Walters Flat	20B15	22	20N	19E	3360
White Pass (East Side)	21C28	2	13N	11E	4500
White Pass (Leach Lake)	21C27	1	13N	11E	4500

LOWER COLUMBIA DRAINAGE

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Asotin Creek					
Spruce Springs	17C4	9	8N	42E	5700
Mill Creek					
Couse	17C3m	2	9N	35E	3370
Homestead	17C1	11	9N	40E	4030
Martin Springs (Helmers SM)	17C2M	23	9N	40E	4400
Walla Walla Diversion	18D13	22	6N	38E	2400
Klickitat River					
Satus Pass	20D1	21	6N	17E	4030
West Fork Cabin	21C15	23	9N	12E	3000
White Solmon River					
Cultus Creek	21C12	35	7N	8E	4000
Lewis River					
Blue Lake	21C22a	19	9N	8E	4800
Bob's Trail	21C21	25	8N	7E	2200
Calamity Ridge	22D1a	8	5N	5E	2500
Council Pass	21C18a	24	9N	9E	4200
Lewis River (continued)					
Divide Meadow	21C29a	21	9N	10E	5600
Grand Meadow	21C25	28	8N	9E	3500
Lone Pine Shelter	21C26	8	9N	7E	3800
Marble Mountain	22C5a	24	8N	5E	3200
New Muddy River	22C6	36	8N	6E	2000
Oldman Pass	21D19	22	6N	7E	3100
Plains of Abraham	22C1a	35	9N	5E	4400
Smith Creek Road	22C4	29	9N	6E	2100
Spencer Meadow	21C20a	16	8N	7E	3400
Surprise Lakes	21C13A	14	7N	8E	4250
Table Mountain	21C24a	20	9N	9E	4200
Timbered Peak	21D18a	36	6N	6E	3000
Cowlitz River					
Cayuse Pass	21C6	15	16N	10E	5300
Mosquito Meadows	21C19	33	10N	7E	4100
Ohanapecosh	21C32	28	15N	10E	2200
Packwood Lake	21C31	21	13N	10E	2870
Pigtail Peak	21C33	11	13N	11E	5900
Potato Hill	21C14	36	10N	10E	4500
Willame Creek	21C30	3	13N	8E	3250

PUGET SOUND DRAINAGE

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Nisqually River					
Ghost Forest	21C4	23	15N	8E	4550
Longmire	21C3	29	15N	8E	2760
Paradise Park (New)	21C35	13	15N	8E	
Stem Glade	21C1	13	15N	8E	5050
White River					
Corral Pass	21B13	30	18N	11E	6000
White River Campground	21C34	4	16N	9E	
Green River					
Airstrip	21B24	18	20N	11E	1800
Charley Creek	21B25	27	21N	8E	1200
Grass Mountain No. 1	21B26	21	20N	8E	4000
Grass Mountain No. 2	21B27	14	20N	8E	2900
Grass Mountain No. 3	21B28	12	20N	8E	2100
Lester Creek	21B29	36	20N	10E	3100
Sawmill Ridge	21B31	5	19N	11E	4700
Stampede Pass	21B10	25	21N	11E	3000
Twin Camp	21B30	18	19N	11E	4100
Cedar River					
City Cabin	21B3	10	21N	10E	2390
Mt. Gardner	21B21	30	22N	10E	3300
Mt. Gardner Aux.	21B22	31	22N	10E	2500
Mt. Lindsay	21B16	31	22N	9E	2500
Mt. Washington	21B15	8	22N	9E	3000
Rex River	21B17	11	21N	9E	2400
South Fork Cedar	21B6	24	21N	10E	3000
Tinkham Creek	21B20	1	21N	10E	3400
Snoqualmie River					
Bandera Air Strip	21B32	16	22N	10E	1635
Olallie Meadows	21B2	19	22N	11E	3625
South Fork Tolt	21B18	26	26N	9E	1900
Skykomish River					
Lake Elizabeth	21B19	33	26N	10E	2900
Skagit River					
Beaver Creek Trail	21A4	35	39N	12E	2200
Beaver Pass	21A1	9	39N	12E	3680
Devils Park	20A4	34	38N	16E	5900
Freezeout Creek Trail	20A1	14	40N	14E	3500
Freezeout Meadows	20A2	8	40N	16E	5000
Lake Hozomeen	21A2	19	40N	14E	2600
Meadows Cabins	20A8	29	36N	14E	1900
Thunder Basin	20A7	15	35N	14E	4200
Baker River					
Dock Butte	21A11A	8	36N	8E	3800
Easy Pass	21A7A	19	39N	11E	5200
Jasper Pass	21A6A	17	38N	11E	5400
Marten Lake	21A9A	23	38N	8E	3600
Mount Blum	21A18a	27	38N	10E	5800
Rocky Creek	21A12A	20	37N	8E	2100
Schreibers Meadow	21A10A	18	37N	8E	3400
S. F. Thunder Creek	21A14A	20	36N	9E	2200
Sulphur Creek	21A13	22	37N	8E	1600
Three Mile Creek	21A15	18	36N	9E	1600
Watson Lakes	21A8	25	37N	9E	4500
Nooksack River					
Bald Mountain	21A19a	7	40N	7E	4400
Canyon	21A20A	20	40N	8E	5100
Glacier Creek	21A23	9-10	38N	7E	3700
Hannegan Pass	21A22a	8	39N	9E	5000
Mazama Park	21A24a	2	37N	7E	4500
Panorama	21A5	17	39N	9E	4300
Twin Lakes	21A21a	16	40N	9E	5200

OLYMPIC PENINSULA

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Dungeness River					
Deer Park	23B4	1	28N	5W	5200
Morse Creek					
Deer Park G. S.	23B13	1	28N	5W	4850
Morse Creek	23B12	25	29N	7W	5425
Elwha River					
Hurricane	23B3	36	29N	7W	4500
Skokomish River					
Black and White	23B7	17	24N	5W	4200
Black and White Lakes	23B6	16	24N	5W	4700
Four Stream	23B10	1	23N	6W	3000
Home Sweet Home	23B5	28	25N	5W	5200
Sundown Pass	23B8	25	24N	7W	3900

LEGEND
NUMBERING SYSTEM EXAMPLE

- 21A7 — Snow Course Only
- 21A7a — Aerial Marker Only
- 21A7A — Snow Course and Aerial Marker
- 21A7M — Snow Course and Soil Moisture Station
- 21A7m — Soil Moisture Station
- 21A7P — Snow Course and Precipitation Storage Gage
- 21A7p — Precipitation Storage Gage
- 21A7SP — Snow Pillow

WATER SUPPLY OUTLOOK

State of Washington
April 1, 1967

* *
* The water supply outlook for irrigation and power in Washington and *
* the tributary streams of the Columbia basin can still be considered *
* good for this time of year. Snow surveys made near the first of *
* April indicate a snowpack near average varying from a low of 72% to *
* a high of 121%. The snow cover as reported last month varies great- *
* ly with elevation. The snow cover at higher elevations is above *
* average to well above and that at lower elevations deficient to non- *
* existent. The variation reported above is based on this high-low *
* elevation difference. Precipitation throughout the State was gen- *
* erally near average with plus and minus differences of insignificant *
* amounts except on the slopes of the Cascades. Runoff was well below *
* normal varying from a low of 51% to a high of 109%. Reservoir stor- *
* age generally is above average in the irrigation reservoirs but be- *
* low normal in most of the power pools. The soil moisture condition *
* can be considered near normal with variations both high and low de- *
* pending on the elevation of the soil moisture station. Since none *
* of these soil moisture stations are located in high elevation areas *
* the soil moisture stations at low elevations have less water in *
* storage than has been experienced in the last couple of years and *
* those at the mid-elevation have more moisture in the soil. Fore- *
* casts of streamflows generally have not changed dramatically from *
* those released last month. Minor changes, both up and down, have *
* occurred as additional data has been gathered in the several water- *
* sheds. *
* *

SNOW COVER

The statement made last month regarding the snow cover picture continues as was reported at that time. Record snowfalls have occurred in the upper Columbia and the Kootenay basins in British Columbia. The higher elevation snow courses indicate 25% to 30% above any previous measurements and the middle and lower elevation snow courses normal to 20% above. The result of this high snowpack at the higher elevations will be a delayed runoff with good water conditions along the main stem late in the runoff season. The snow cover in Washington is good in the north at the higher elevations and deteriorates the further south you go across the State and the lower you go, elevation-wise, in the watersheds themselves. Low elevation watersheds, such as the Cedar, are reported to have only 72% of a normal snowpack. High elevation watersheds such as the Kettle, Okanogan and Skokomish have a snow cover that is 19% to 21% above normal.

RESERVOIRS

The reservoirs in the Yakima River watershed have well above normal amounts of water in storage as of April 1 with the exception of Bumping Lake. The two small reservoirs in Okanogan County--on Salmon Creek--have less than normal amounts in storage but one of these reservoirs was empty

last year at this time. The power reservoirs have less water in storage in the interior basin of the State but Ross reservoir on the Coast has more water in storage than normal for this time of year.

PRECIPITATION

The precipitation picture as reported by the United States Weather Bureau was slightly above normal in the northwest Cascade portion of the basin. The Pend Oreille, Spokane and northeast portion of the State, the central area of Washington from the Okanogan through the Yakima watersheds and extending into the southeast portion of Washington, all had less than normal rainfall during the month. The northwest slopes of the Cascades had 18% above normal precipitation while the southwest slopes of these same mountains were slightly below normal. Winter precipitation was reported last month.

SOIL MOISTURE

The soil moisture stations vary with location and elevation. The stations in the Crab Creek drainage in Lincoln County generally have drier soils than reported last year but very close to that reported in 1965. These soils are still very close to being in a saturated condition. In the Okanogan drainage north of the border, soils are similar to last year but drier than the year before. The new station in the Washington portion of this drainage has well above last year's soil moisture. Both of these soil mantles can hold considerably more moisture and will before the end of the snow-melt season. The two stations in the Yakima drainage have better than last year's soil moisture condition and the same as 1965. The same is true for the two soil moisture stations in the Blue Mountain portion of Washington.

STREAMFLOW

Generally speaking, March streamflow was well below normal on all rivers in the State. The only exceptions were the Columbia River at International Boundary and the Skagit River at Concrete. Forecasts of streamflows can be found elsewhere in this report and vary from a high of 22% above normal for the Columbia at Birchbank to a low of 72% of normal for the Colville River as measured at Kettle Falls. Most of the other gaging stations are expected to have near normal amounts of water during the forthcoming runoff season.

STREAMFLOW FORECASTS - APRIL 1967

The following summarized runoff forecasts are based principally on mountain snow cover and on the assumption that precipitation and temperature will be near average from the present time to the end of the forecast period. Appreciable deviations from normal of temperature and/or precipitation will correspondingly modify these forecasts.

Basin, Stream and Station	Forecast Runoff 1967	% 15-Yr. Avg.	Forecast Period	Seasonal Streamflow in Thousand of Acre-Feet: Measured Runoff 1966	1965	1964	15-Yr. Average 1948-62
COLUMBIA BASIN							
Columbia River System							
Columbia River at Birchbank 1/	55000	122	Apr-Sep	45563	43275	46796	45027
	43300	122	Apr-Jul	35808	32967	36491	35517
	30700	123	Apr-Jun	24863	23220	23751	24982
Columbia River at Grand Coulee 1/	83800	119	Apr-Sep	62404	69626	69628	70253
	70700	120	Apr-Jul	51602	56879	57669	58921
	54600	120	Apr-Jun	38739	44465	42008	45486
Columbia River bl. Rock Island Dam 1/	90500	117	Apr-Sep	67973	74986	78366	77313
	76700	118	Apr-Jul	56575	61759	64710	64967
	59700	119	Apr-Jun	42757	48045	46870	50178
Columbia River at The Dalles, Ore 1/	122000	112	Apr-Sep	86923	112902	109017	108696
	104000	112	Apr-Jul	72261	95012	92143	92527
	84000	113	Apr-Jun	56465	76940	70739	74281
Pend Oreille River System							
Pend Oreille River bl. Box Canyon	19300	114	Apr-Sep		19515	17542	16905
	17600	113	Apr-Jul		17601	15990	15571
	15200	113	Apr-Jun		15299	13518	13399
Kettle River System							
Kettle River nr. Laurier	2100	102	Apr-Sep		1852	2022	2051
	2000	102	Apr-Jul		1759	1796	1952
	1870	105	Apr-Jun		1657	1580	1774

1/ Observed flow corrected for storage in any of the following reservoirs which are above the station: Kootenay Lake, Hungry Horse, Flathead Lake, Pend Oreille Lake, F. D. Roosevelt Lake, Lake Chelan, Coeur d'Alene Lake, Brownlee, Noxon Reservoir and pumpage at F. D. Roosevelt Lake.

Streamflow Forecasts - April 1967 (Cont.)

Basin, Stream and Station	Forecast Runoff 1967	% 15-Yr. Avg.	Forecast Period	Seasonal Streamflow in Thousands of Acre-Feet: Measured Runoff 1966	1965	1964	15-Yr. Average 1948-62
Kettle River System (Cont)							
Colville River							
at Kettle Falls	135	72	Apr-Sep		166	92	187
	125	73	Apr-Jul		154	82	172
	115	72	Apr-Jun		146	77	159
Spokane River System*							
Spokane River							
at Post Falls, Ida. 2/	3100	91	Apr-Sep		3345	3836	3413
	3000	90	Apr-Jul		3209	3675	3316
	2860	91	Apr-Jun		3066	3466	3158
Okanogan River System**							
Similkameen River							
nr. Nighthawk	1650	99	Apr-Sep		1356	1872	1665
	1550	100	Apr-Jul		1260	1715	1550
	1360	102	Apr-Jun		1114	1340	1331
Okanogan River							
at Oroville 3/	570	115	Apr-Sep		447	373	495
	560	113	Apr-Jul		441	329	493
	530	112	Apr-Jun		439	299	472
Okanogan River							
nr Tonasket	1990	102	Apr-Sep		1614	2058	1957
	1810	102	Apr-Jul		1474	1823	1771
	1550	103	Apr-Jun		1300	1420	1502
Methow River System**							
Methow River							
nr. Pateros	1180	100	Apr-Sep	661	817	949	1178
	1070	98	Apr-Jul	610	740	884	1096
	920	98	Apr-Jun	515	639	729	940
Chelan River System							
Chelan River							
at Chelan 4/	1410	104	Apr-Sep		1149	1293	1352
	1270	106	Apr-Jul		1012	1141	1202
	1010	107	Apr-Jun		792	821	946

* Forecasts made by Morlan W. Nelson and J. Alden Wilson, Soil Conservation Service, Boise, Idaho.

** These forecasts are based in part upon base flow data especially prepared and furnished for this purpose by the U. S. Geological Survey.

2/ Observed flow corrected for storage in Coeur d'Alene Lake and diversions by Spokane Valley Farms Company and Rathdrum Prairie Canals.

3/ Observed flow corrected for storage and diversions.

4/ Observed flow corrected for storage in Lake Chelan.

Streamflow Forecasts - April 1967 (Cont.)

Basin, Stream and Station	Forecast Runoff 1967	% 15-Yr. Avg.	Forecast Period	Seasonal Streamflow in Thousands of Acre-Feet: Measured Runoff 1966	1965	1964	15-Yr. Average 1948-62
Chelan River System (Cont.)							
Stehekin River at Stehekin	1000	106	Apr-Sep		826	949	943
	865	107	Apr-Jul		701	815	810
	685	111	Apr-Jun		536	578	617
Wenatchee River System							
Wenatchee River at Plain	1400	100	Apr-Sep	1091	1308	1469	1397
	1280	101	Apr-Jul	999	1189	1295	1267
	1040	103	Apr-Jun	816	975	924	1013
Wenatchee River at Peshastin	1880	98	Apr-Sep	1493	1747	1951	1924
	1730	98	Apr-Jul	1379	1604	1735	1758
	1420	100	Apr-Jun	1131	1328	1252	1415
Stemilt Basin nr. Wenatchee	118*	--	May-Sep		132*	146*	--
Yakima River System							
Yakima River nr. Martin 5/	145	92	Apr-Sep	129	132	203	158
	135	92	Apr-Jul	125	126	182	146
	119	94	Apr-Jun	113	115	138	126
Yakima River at Cle Elum 6/	935	89	Apr-Sep		921	1254	1046
	870	90	Apr-Jul		851	1127	962
	765	92	Apr-Jun		756	888	834
Yakima River nr. Parker 7/	1710	85	Apr-Sep		1653	2005	2016
	1700	86	Apr-Jul		1643	1917	1988
	1600	88	Apr-Jun		1571	1606	1826
Kachess River nr. Easton 8/	130	92	Apr-Sep	111	117	176	141
	124	93	Apr-Jul	110	112	161	134
	113	96	Apr-Jun	101	104	128	118

* Thousands of Miners' Inches.

5/ Observed flow corrected for storage in Lake Keechelus.

6/ Observed flow corrected for storage in Keechelus, Kachess and Cle Elum Lakes and diversion by Kittitas Canal.

7/ Observed flow corrected for storage in Keechelus, Kachess, Cle Elum, Bumping and Rimrock Lakes and diversions by Roza, Union Gap, New Reservation, Old Reservation and Sunnyside Canals.

8/ Observed flow corrected for storage in Lake Kachess.

Streamflow Forecasts - April 1967 (Cont.)

Basin, Stream and Station	Forecast Runoff 1967	% 15-Yr. Avg.	Forecast Period	Seasonal Streamflow in Thousands of Acre-Feet: Measured Runoff 1966	1965	1964	15-Yr. Average 1948-62
Yakima River System (Cont.)							
Cle Elum River							
nr. Roslyn 9/	480	91	Apr-Sep	420	448	577	525
	440	91	Apr-Jul	396	418	520	483
	370	91	Apr-Jun	340	367	401	407
Bumping River							
nr. Nile 10/	145	89	Apr-Sep	125	140	167	163
	134	89	Apr-Jul	117	131	150	151
	114	92	Apr-Jun	102	115	109	124
American River							
nr. Nile	120	86	Apr-Sep		121	131	140
	112	86	Apr-Jul		113	120	130
	96	89	Apr-Jun		100	90	108
Tieton River							
at Tieton Dam 11/	250	89	Apr-Sep	204	236	235	280
	216	90	Apr-Jul	179	205	201	241
	175	91	Apr-Jun	149	175	146	193
Naches River							
nr. Naches 12/	890	90	Apr-Sep		888	914	991
	815	90	Apr-Jul		814	818	908
	690	89	Apr-Jun		719	642	776
Ahtanum Creeks							
nr. Tampico 13/	40	73	Apr-Sep		44	35	55
	36	71	Apr-Jul		40	31	51
	33	73	Apr-Jun		36	26	45
Lower Columbia River System							
Mill Creek							
nr. Walla Walla	29	85	Apr-Sep	23	27	34	34
	25	83	Apr-Jul	20	23	31	30
	20	81	Apr-Jun	18	21	28	27
Lewis River							
at Ariel 14/	1450	100	Apr-Sep		1057	1451	1450
	1290	100	Apr-Jul		940	1233	1286
	1150	101	Apr-Jun		854	1053	1140
Cowlitz River							
at Castle Rock 15/	2950	100	Apr-Sep		2174	3330	2954
	2630	100	Apr-Jul		1901	2884	2620
	2220	99	Apr-Jun		1650	2338	2244

9/ Observed flow corrected for storage in Lake Cle Elum.
10/ Observed flow corrected for storage in Bumping Lake.
11/ Observed flow corrected for storage in Rimrock Lake.
12/ Observed flow corrected for storage in Bumping and Rimrock Lakes and diversions by Tieton, Selah Valley, Wapatox Canals and City of Yakima.
13/ Observed flow of North and South Forks (combined).
14/ Observed flow corrected for storage in Lake Merwin, Yale and Swift Reservoirs.
15/ Observed flow corrected for storage in Mayfield Reservoir.

Streamflow Forecasts - April 1967 (Cont)

Basin, Stream and Station	Forecast Runoff 1967	Seasonal Streamflow in Thousands of Acre-Feet: % 15-Yr. Avg.	Fore-cast Period	Measured Runoff 1966	1965	1964	15-Yr. Average 1948-62
OLYMPIC PENINSULA							
Dungeness River System							
Dungeness River nr. Sequim	180	101	Apr-Sep	130	159		178
	150	102	Apr-Jul	108	132		147
	115	104	Apr-Jun	84	95		111

COMPARISON OF SNOW COVER WITH THAT OF PREVIOUS YEARS

The following tabulation of Washington stream basins presents the water content of the snow about April 1, 1967 as per cent of the same date in 1966 and 1965 and average of record.

Tributary Basin	No. of Courses Average	Years of Record	1967 Snow Water Expressed as per cent of 1966	1965	1948-62 Average
UPPER COLUMBIA BASIN					
Pend Oreille	12 - 14	3 - 30	112	100	100*
Kettle	3 - 13	4 - 29	130	86	121*
Colville	1 - 5	3 - 8	59	48	81*
Spokane	12 - 16	3 - 30	118	98	103*
Sanpoil	1	28	107	105	110
Okanogan	24 - 35	2 - 32	127	125	121*
Methow	5 - 10	6 - 25	132	134	116*
Chelan	3 - 5	6 - 35	134	117	115*
Entiat	6	2	145	--	--
Wenatchee	5 - 13	6 - 35	90	83	98*
Yakima	10 - 12	1 - 48	95	101	94*
Ahtanum	2	18	90	116	110*
LOWER COLUMBIA					
Mill Creek	3	10 - 12	56	75	78*
Klickitat	1	10	14	24	--
White Salmon	2	23	92	105	97*
Lewis	4 - 9	6 - 23	73	98	98*
Cowlitz	4 - 9	4 - 27	96	102	98*
PUGET SOUND					
Nisqually	3 - 4	2 - 17	121	112	106*
White	3	11 - 27	110	117	108*
Green	1 - 9	6 - 21	96	95	99*
Cedar	5 - 6	8 - 19	55	65	72*
Snoqualmie	1 - 3	9 - 22	89	92	90*
Skykomish	1 - 2	9 - 22	104	85	106*
Skagit	14	16 - 35	120	113	106*
Baker	11	7	108	127	--
Nooksack	1	10	103	136	--
OLYMPIC PENINSULA					
Skokomish	3 - 5	3 - 17	97	157	119*
Elwha	1	17	101	150	106*
Dungeness	1	17	--	142	105*

* Records of less than 15 years used in computation of average

RESERVOIR STORAGE - 1000 Acre Feet

BASIN or STREAM	RESERVOIR	USABLE 1/ CAPACITY	Measured (April 1) 1967	1966	1965	Normal*
		COLUMBIA				
Spokane	Coeur d'Alene Lake	225.1	158.1	187.0	118.8	174.4
Columbia	Franklin D. Roosevelt Lake	5232.0	1957.1	872.0	2679.0	2969.4
Columbia	Banks Lake 2/	761.8	661.5	481.6	423.4	505.1
Okanogan	Conconully Reservoir	13.0	3.9	0.7	5.2	8.0
Okanogan	Salmon Lake	10.5	3.3	7.6	8.3	8.9
Chelan	Lake Chelan	676.1	90.7	85.3	288.3	197.9
		YAKIMA				
Yakima	Keechelus Lake	157.8	127.2	92.9	87.0	94.4
Kachess	Kachess Lake	239.0	204.2	177.1	184.1	182.4
Cle Elum	Lake Cle Elum	436.9	290.8	213.2	337.2	271.9
Bumping	Bumping Lake	33.7	3.8	4.2	6.3	13.4
Tieton	Rimrock Lake	198.0	128.7	92.0	144.6	129.0
		PUGET SOUND				
Skagit	Ross Reservoir 2/	1202.9	866.3	503.3	817.4	513.8
Skagit	Diablo Reservoir	90.6	84.0	84.2	83.8	82.1
Skagit	Gorge Reservoir	9.8	8.2	7.2	8.4	--

1/ Based on Active Storage

2/ Less than 15-year record in period 1948-62

* 15-year average 1948-62

SOIL MOISTURE - APRIL

Drainage Basin and Station	Number	Elev.	Profile (Inches): Depth	Total Capacity:	Soil Moisture Content (Inches) as of April 1 1967	1966	1965
CRAB CREEK							
Creston-Kunz	18B1m	2440	48	13.6	10.2	11.3	8.9
Jack Woods	18B3m	2600	48	13.6	9.7	9.9	9.5
Krause	18B4m	2440	48	13.6	9.2	9.8	9.3
Sheffels	18B5m	2360	48	13.6	8.1	7.2	8.2
Sherman	18B7m	2440	48	13.6	10.2	--	--
Wheatridge	18B6m	2200	48	13.6	9.2	8.0	8.5
OKANOGAN							
1/ Trout Creek	3-M	3600	48	7.3	3.4*	3.3*	4.2
YAKIMA							
Domery Flat	21B20m	2200	48	6.9	4.9**	4.4**	4.8
Lake Cle Elum	21B14M	2200	48	12.8	9.2**	9.0	9.2
WALLA WALLA							
Couse	17C3m	3650	48	11.1	10.2	7.9	10.6*
Helmers	17C2M	4400	48	12.0	11.0	7.4	12.2*
WENATCHEE							
Upper Wheeler	20B7M	4400	48	12.7	12.2	9.0	10.3
*March 1 measurement							
**March 15 measurement							
1/ Salmon Meadows	19A2M	4500	48	5.4	3.7	2.1*	--

FALL SOIL MOISTURE

Drainage Basin and Station	Number	Elev.	Profile (Inches): Depth	Total Capacity:	Soil Moisture Content (Inches) as of Oct. 1 1966	1965	1964
CRAB CREEK							
Creston-Kunz	18B1m	2440	48	13.6	5.0	4.9	5.4
Jack Woods	18B3m	2600	48	13.6	4.3	5.0	4.4
Krause	18B4m	2440	48	13.6	5.1	5.8	5.9
Sheffels	18B5m	2360	48	13.6	3.8	4.0	3.7
Sherman	18B7m						
Wheatridge	18B6m	2200	48	13.6	4.1	4.2	4.1
OKANOGAN							
1/ Trout Creek	3-M	3600	48	7.3	3.8	4.1	4.9
YAKIMA							
Domery Flat	21B20m	2200	48	6.9	2.4	1.9	4.4
Lake Cle Elum	21B14M	2200	48	12.8	6.4	6.9	8.5
WALLA WALLA							
Couse	17C3m	3650	48	11.1	5.7	6.0	5.6
Helmers	17C2M	4440	48	12.0	6.7	6.2	6.0
WENATCHEE							
Upper Wheeler	20B7M	4400	48	12.7	5.7	6.2	5.3
1/ Salmon Meadows	19A2M	4500	48	5.4	3.0	1.9	--

PRECIPITATION 1/

Division Averages and Departures

DRAINAGE DIVISIONS	FALL Sept-Nov. 1966 2/ Observed	Departure	WINTER Dec. '66-Feb. '67 2/ Observed	Departure	SPRING March, 1967 2/ Observed	Departure
Columbia in Canada	6.80	+0.53	9.73	+0.94	2.03	+0.57
Pend Oreille - Spokane	7.75	-1.19	12.63	+0.44	2.87	+0.07
Northeastern Washington	5.29	-0.02	7.10	-0.18	2.02	+0.37
Southeastern Washington	5.33	-0.54	7.59	-0.40	2.02	-0.15
Central Washington	8.93	-2.94	18.43	-0.27	3.27	-0.38
North Central Washington	3.55	+0.52	4.08	+2.27	0.72	-0.29
Northwest Slope Cascades	20.24	-3.80	42.10	+8.65	9.83	+2.08
Southwest Slope Cascades	15.38	-2.71	29.55	+3.42	6.36	-0.12

Northeastern Washington - Lower Spokane, Colville, Sanpoil and lower Kettle drainages

Southeastern Washington - Touchet, Tucannon and Palouse drainages

Central Washington - Yakima, Wenatchee and Chelan drainages

North Central Washington - Methow and Okanogan drainages

Northwest Slope Cascades - Puget Sound drainages

Southwest Slope Cascades - Lower Columbia drainages

1/ - Preliminary analysis by U. S. Weather Bureau from data furnished by Meteorological Services of Canada and U. S. Weather Bureau

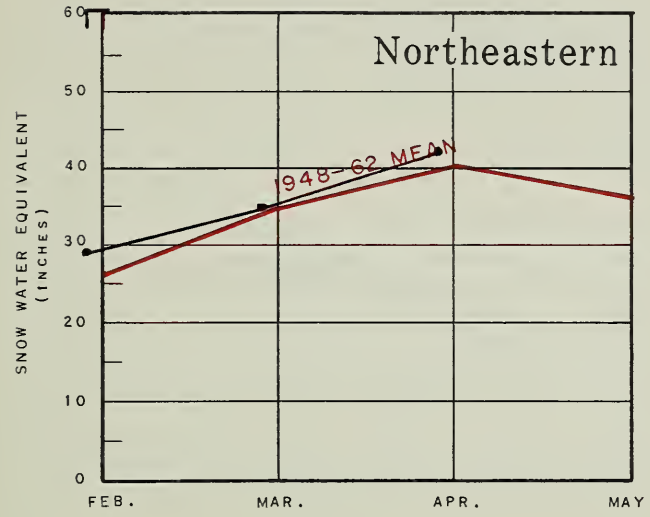
2/ - Departure from 15-year (1948-62) drainage division average

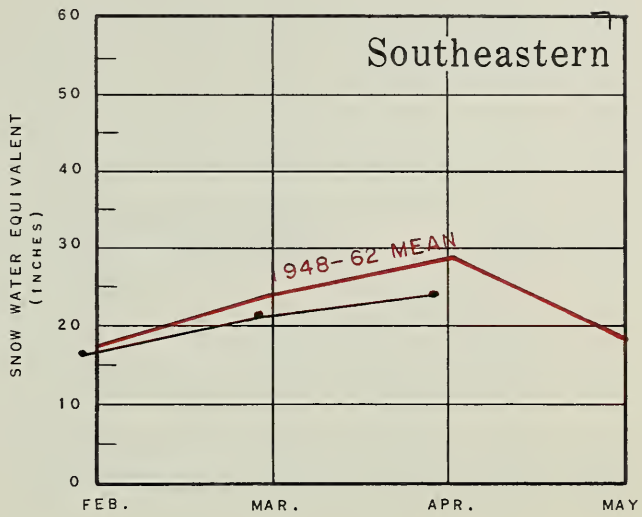
Note: Precipitation shown in inches

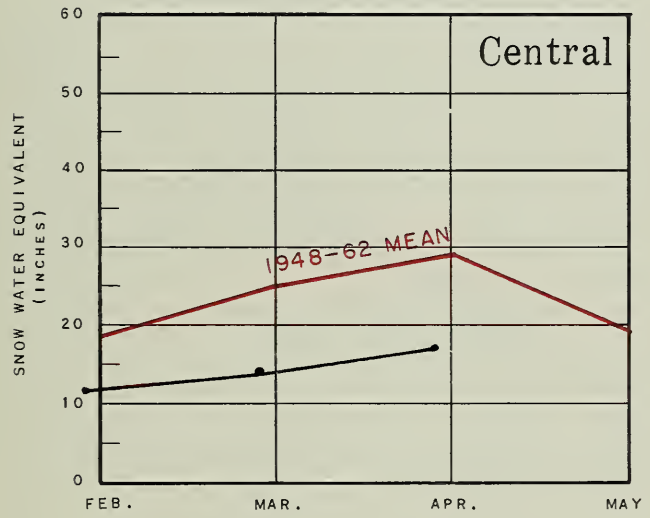
WASHINGTON SNOW COVER

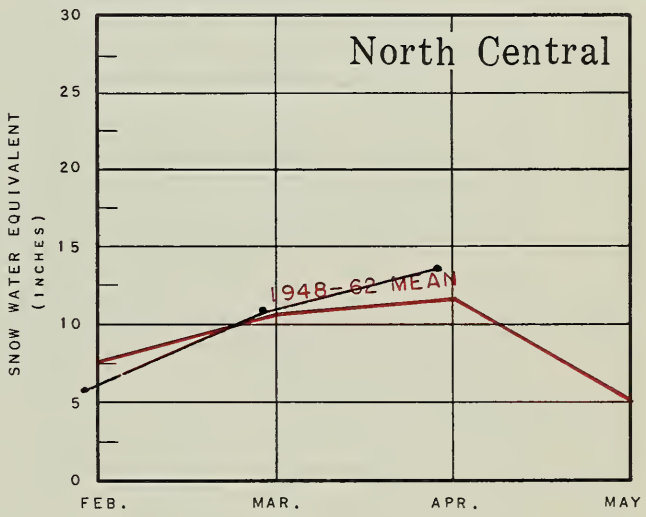
1967

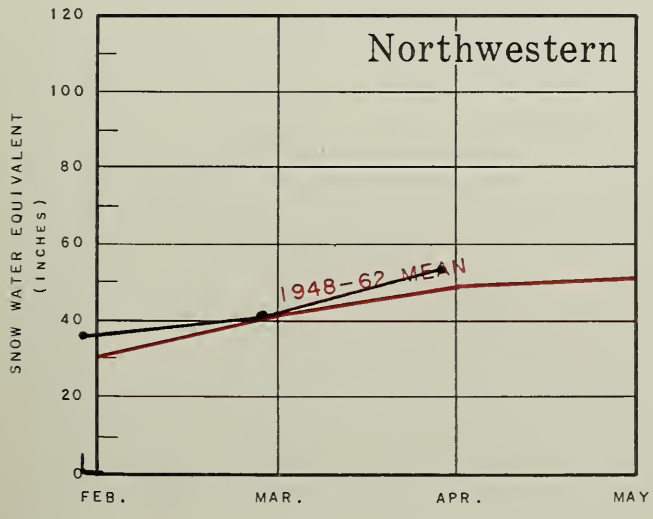
DRAINAGE AREAS

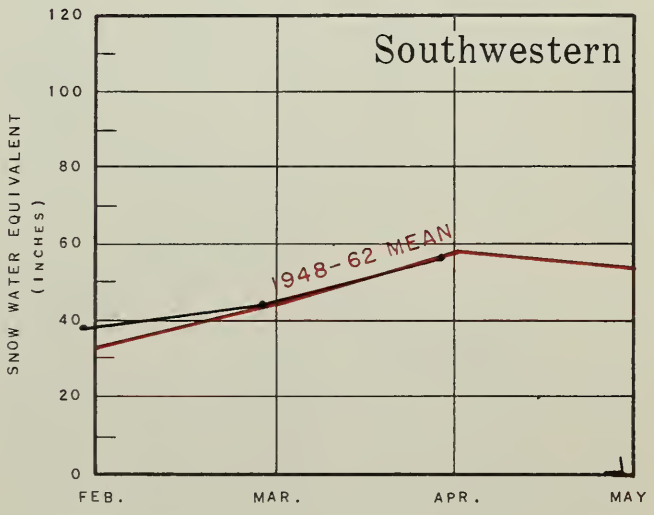










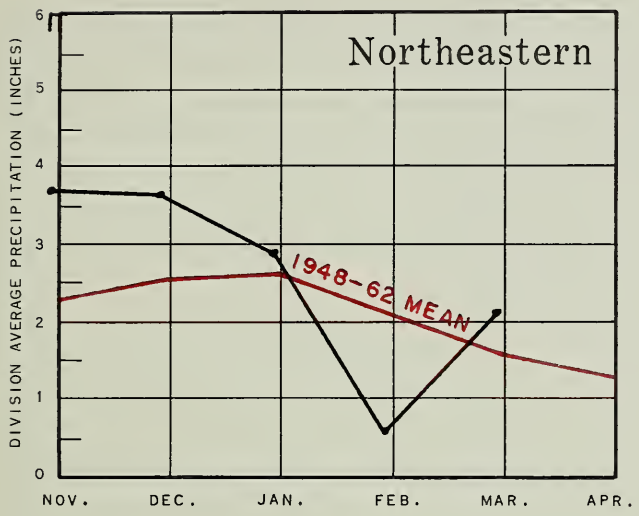


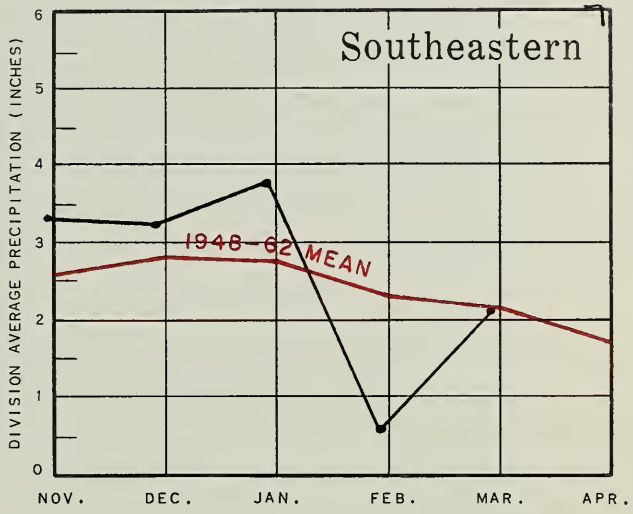
Selected Snow Survey Courses by Soil Conservation Service

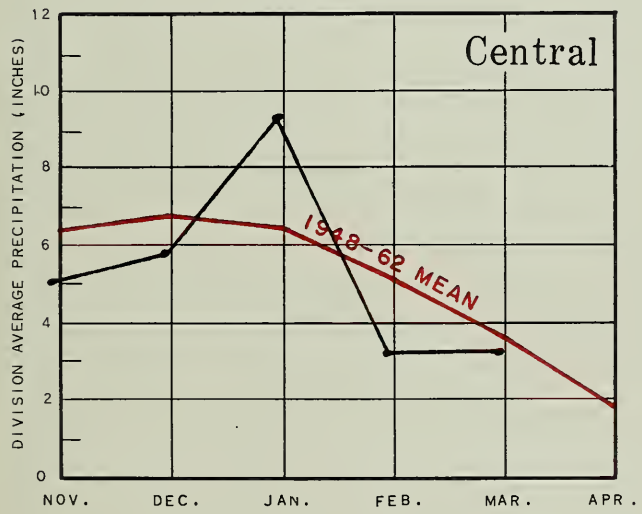
WASHINGTON VALLEY PRECIPITATION

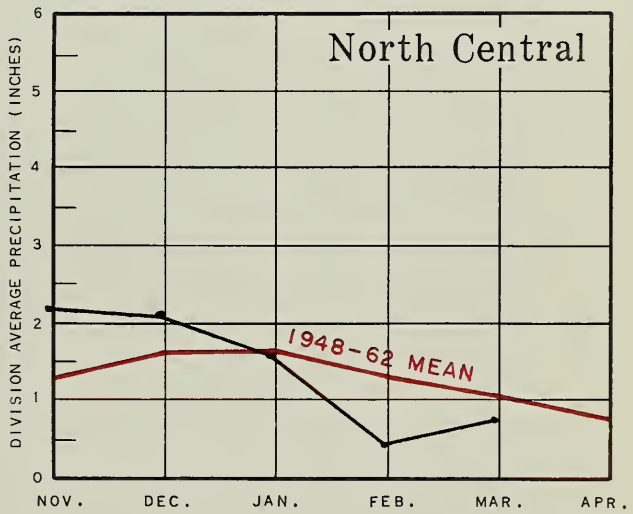
1966 - 1967

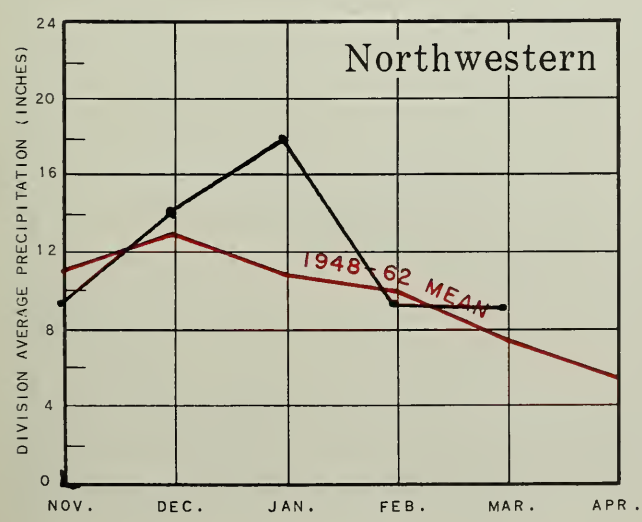
DRAINAGE AREAS

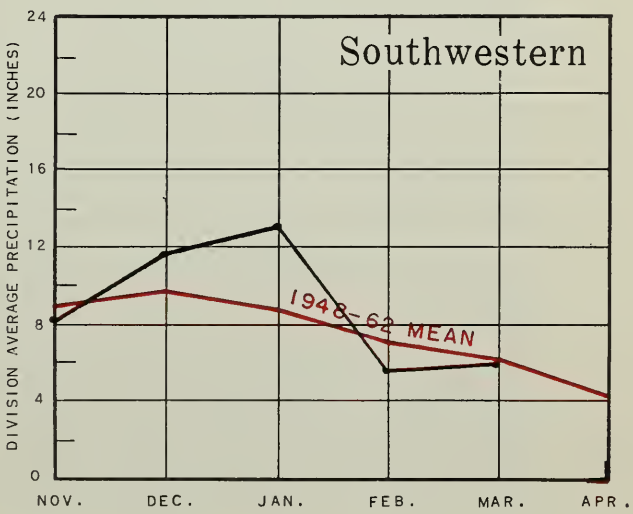












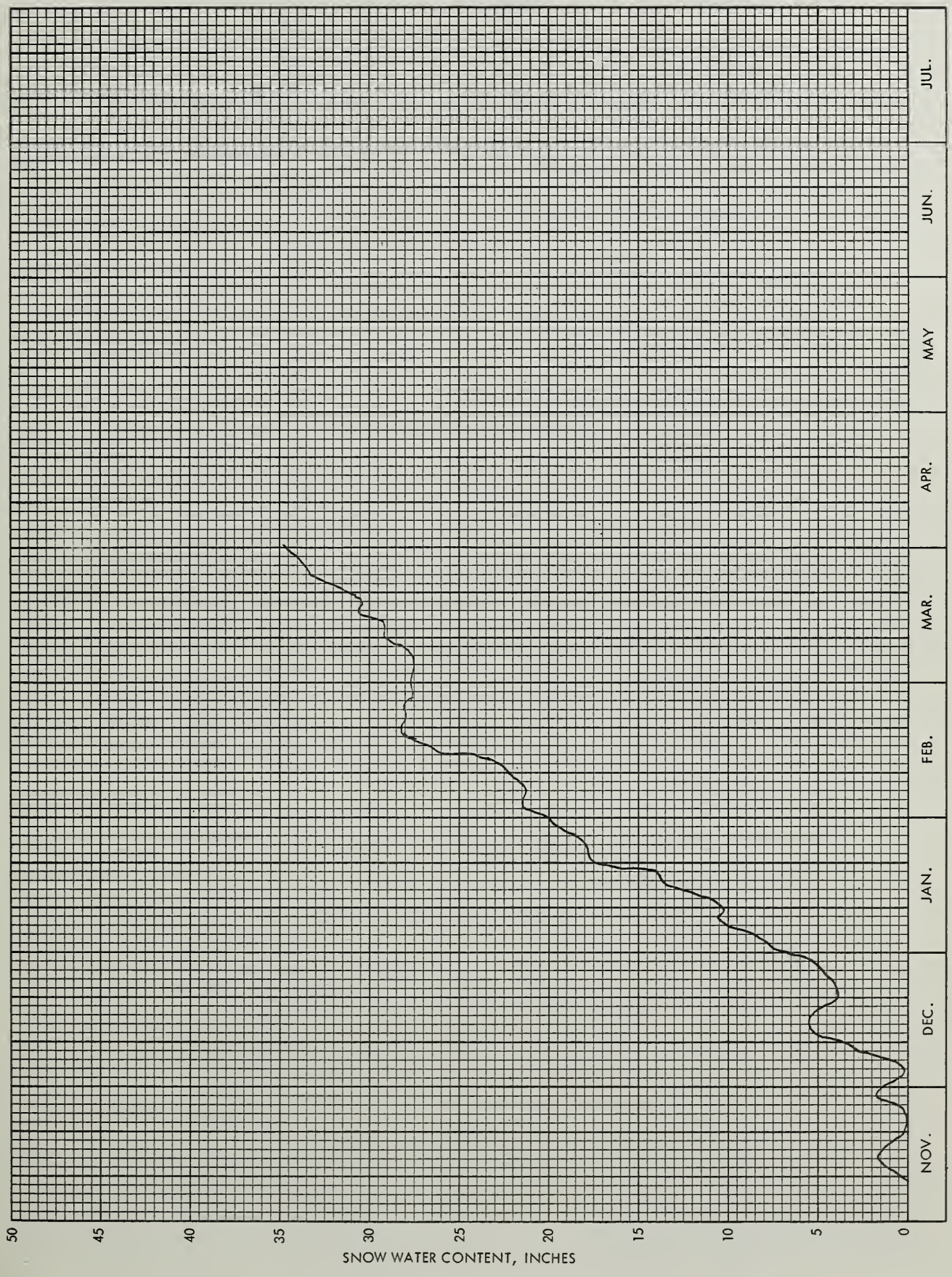
Preliminary Analysis by U. S. Weather Bureau

SNOW PILLOW DATA

EBA Pillow - Snoqualmie Pass

Sec. 4 T. 22N R. 11E No. 21B33SP Drainage: Yakima

Lat. 47° 25' Long. 121° 25' Elev. 3020

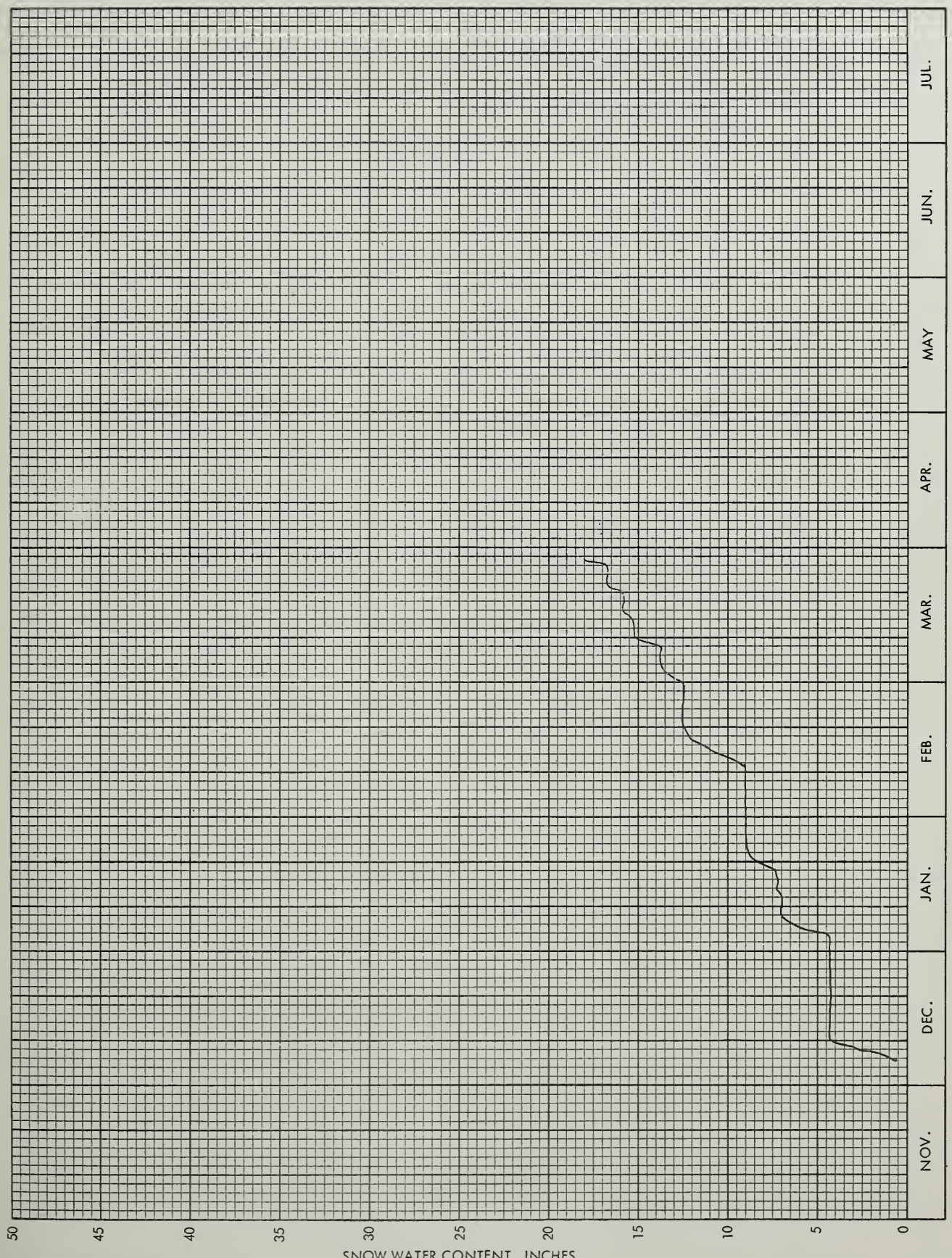


SNOW PILLOW DATA

Cougar Mountain - FS

Sec. 28 T. 21N R. 9E No. 21B42SP Drainage: Green River

Lat. _____ Long. _____ Elev. 3200

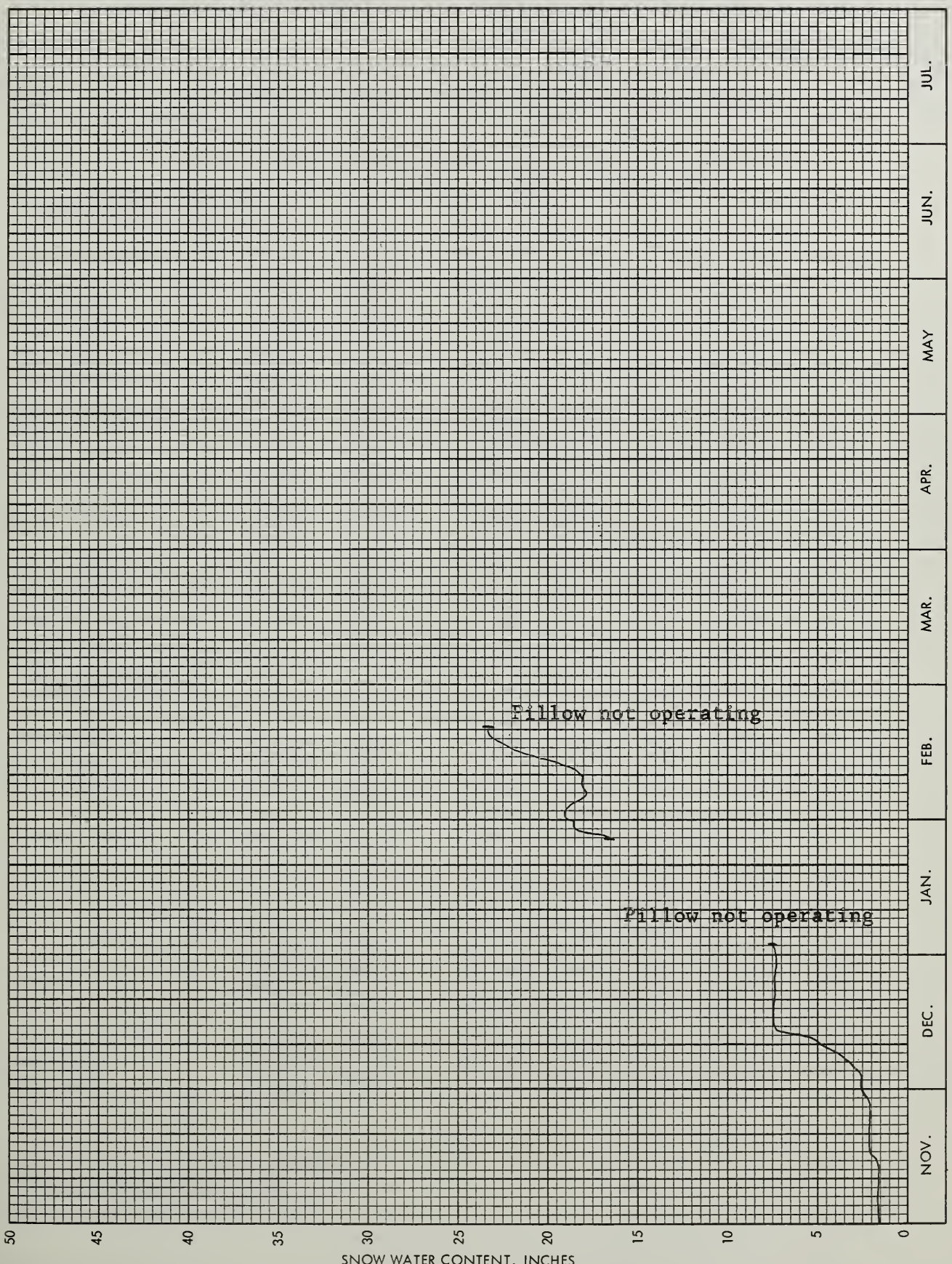


SNOW PILLOW DATA

Berne-Mill Creek

Sec. 13 T. 26N R. 14E No. 21B41SP Drainage: Wenatchee

Lat. 47°46' Long. 121° 01' Elev. 3170



APPENDIX I

SNOW DATA MARCH 1 to APRIL 1, 1967

DRAINAGE BASIN and SNOW COURSE	No.	Elev.	SNOW COVER MEASUREMENT 1967 Date of Survey	Snow Depth (In.)	Water Content (In.)	Past Record Water Content (In.) :1966	1965	1948-62 Avg.
UPPER COLUMBIA DRAINAGE								
PEND OREILLE RIVER								
Baree Creek	15B11	5500	3/31	148	56.6	45.0	48.1	50.5
Baree Midway	15B16	4600	3/31	120	39.0	--	--	--
Benton Meadow	16A2	2344	3/31	5	1.6	2.8	8.1	3.3
Benton Spring	16A3	4900	3/31	64	23.0	19.0	19.7	22.9
Boyer Mountain	17A2	5250	3/27	73	23.9	26.0	32.4	29.8
Brush Creek	14A4	5000	3/29	43	14.4	11.4	13.9	14.3*
Bunchgrass Meadow	17A1	5000	3/29	100	41.1	28.9	34.2	32.0
#Chewelah	17A4	4925	3/30	50	16.2	21.6	23.2	20.0*
Hoodo Creek	15C1	6200	3/27	141	53.4	42.6	55.6	53.4
Lookout	15B2	5250	3/30	114	40.8	34.3	41.0	40.5
Mosquito Ridge	16A4A	5100	Late Report			39.0	42.2	41.2
Nelson	Canada	3050	3/31	50	18.2	19.9	18.9	17.8
Schweitzer Bowl	16A6	4500	4/1	101	39.3	34.2	33.0	--
Schweitzer Ridge	16A5	6100	4/1	143	57.7	48.8	48.8	--
Smith Creek	16A1	4800	3/29	124	49.3	47.4	51.3	50.9
Winchester Creek	17A3	2970	3/27	27	8.7	13.2	15.7	11.9
KETTLE RIVER								
Barnes Creek	Canada	5300	3/30	70	25.4	23.5	23.9	21.4**
Big White Mountain	Canada	5500	3/29	72	26.6	15.8	--	--
Boulder Road	18A2	1450	3/13	10	2.7	--	--	--
			3/30	0	0.0	2.5	--	--
Butte Creek	18A3	4070	3/13	32	8.1	--	--	--
			3/30	34	10.6	8.4	12.1	--
Cabin Creek	18A8	3170	3/13	30	6.9	--	--	--
			3/30	26	8.0	7.8	10.5	--
Carmi	Canada	4100	4/1	25	8.9	2.3	8.5	--
Farron	Canada	4000	3/31	45	15.6	11.7	15.6	15.6
Goat Creek	18A4	3595	3/13	23	5.2	--	--	--
			3/30	19	6.1	5.6	6.1	--
Lower Trapping Cr.	Canada	3050	3/30	13	4.6	2.3	--	--
Monashee Pass	Canada	4500	3/30	48	17.0	14.2	17.1	13.7**
Old Glory Mtn.	Canada	7000	3/30	108	34.8	29.1	--	26.5**

\# Not directly on this drainage
* Adjusted 1948-62 average
** Average for years of record

APPRENDIX 2

DRAINAGE BASIN and SNOW COURSE	No.	Elev.	SNOW COVER MEASUREMENT 1967 Date of Survey	Snow Depth (In.)	Water Content (In.)	Past Record Water Content (In.) 1966	1965	1948-62 Avg.
KETTLE RIVER (Cont.)								
Snow Caps Creek	18A5	2150	3/13	8	1.2	--	--	--
			3/30	0	0.0	0.0	4.2	--
Snow Caps Trail	18A6	2720	3/13	19	4.4	--	--	--
			3/30	11	4.1	5.7	6.7	--
Summit G. S.	18A7	4600	3/13	30	8.2	--	--	--
			3/30	33	9.3	7.1	11.6	--
Upper Trapping Cr.	Canada	5500	3/29	39	11.0	7.7	--	--
COLVILLE RIVER								
Baird	17A6	3215	3/31	10	3.4	6.5	10.0	--
Carlson	18A9	2885	3/28	0	0.0	1.4	5.4	--
Chewelah	17A4	4925	3/30	50	16.2	21.6	23.2	20.0*
Stranger Mtn.	17A5	4990	3/29	35	10.7	16.9	19.7	--
Togo	18A10	3370	3/28	17	5.4	14.1	15.7	--
SPOKANE RIVER								
Above Burke	15B8	4100	3/29	75	28.5	26.7	27.0	22.5
Above Roland	15B7	4350	3/30	104	41.1	29.7	34.2	32.3
Below Roland	15B6	3770	3/30	48	18.9	15.2	14.7	15.5
Copper Ridge	16B2	4800	3/31	82	33.6	29.4	33.4	33.3
Forty-nine Meadows	15B3	5000	4/1	89	34.2	34.7	41.6	39.4
Fourth of July Summit	16B3	3100	3/15	28	7.8	--	--	--
			3/30	25	8.2	8.1	10.2	11.2
Granite Peak	15B13A	6000	4/1	143	52.4	47.0	54.4	--
Kellogg Peak	16B5A	5560	4/4	90	36.1	32.4	37.6	35.8*
#Lookout	15B2	5250	3/30	114	40.8	34.3	41.0	40.5
Lost Lake	15B14A	6000	4/1	169	67.4	53.6	76.3	--
Lower Sands Creek	16B1	3400	4/3	49	17.4	20.2	23.5	22.7*
Medicine Ridge	15B4A	6150	4/1	143	57.2	46.8	55.2	--
#Mosquito Ridge	16A4A	5110	Late Report			39.0	42.2	41.2
Outlaw Creek	15B12A	3750	4/1	46	15.0	18.0	14.9	--
Roland Summit	15B5A	5200	3/30	130	47.1	27.7	40.7	44.7*
Sherwin	16C1	3200	3/30	41	13.0	11.3	20.4	15.8*
Sunset	15B9A	5600	3/28	111	43.5	35.3	38.4	36.3*

\# Not located directly on this drainage
* Adjusted 1948-62 average
** Average for years of record

APPENDIX 3

DRAINAGE BASIN and SNOW COURSE	No.	Elev.	SNOW COVER MEASUREMENT 1967 Date of Survey	1967 Snow Depth (In.)	1967 Water Content (In.)	Past Record Water Content (In.) 1966	1965	1948-62 Avg.
SANPOIL RIVER								
Sherman Creek Pass	18A1	5350	3/29	54	17.6	16.5	16.8	16.0
OKANOGAN RIVER								
Aberdeen Lake	Canada	4300	3/31	23	5.4	5.0	5.0	7.1
Blackwall Mtn.	Canada	6250	3/28	107	44.0	31.6	35.0	32.2**
Bouleau Creek	Canada	5000	3/31	38	12.6	9.5	12.8	11.8**
Brookmere	Canada	3200	3/30	36	11.6	8.6	7.8	10.1
Carrs Landing #1	Canada	2250	3/25	0	0.0	New Course		
Carrs Landing #2	Canada	3200	3/25	11	3.7	New Course		
Clark +	19A8a	7000	4/3	66	23.1	18.9	24.7	--
Copper Mountain	Canada	4300	3/29	15	5.3	5.5	4.3	5.9**
Enderby	Canada	6250	3/28	121	45.2	32.3	32.8	--
#Freezeout Meadows	20A2	5000	3/28	97	34.7	43.0	34.2	35.6
Hamilton Hill	Canada	4900	3/31	53	18.7	14.8	13.2	14.2**
#Harts Pass	20A5A	6500	3/28	139	53.3	40.5	44.1	49.6*
#Horseshoe Basin +	19A5a	7000	3/30	60	21.0	16.6	15.5	--
Isintok Lake	Canada	5510	3/31	32	10.3	5.5	6.6	--
Lost Horse Mtn.	Canada	6300	Late Report			5.8	7.2	7.5**
#Loup Loup	19A7	4650	3/30	30	9.4	8.5	8.0	--
Lower Esperon Creek	Canada	4270	4/3	37	13.6	11.0	--	--
McCulloch	Canada	4200	3/30	26	8.2	5.0	7.4	6.9
Middle Esperon Creek	Canada	4580	4/3	42	14.7	13.6	--	--
Missezula Mountain	Canada	5100	3/30	35	11.4	6.0	6.7	7.2**
Mission Creek	Canada	6000	3/28	68	24.2	17.5	22.7	20.8
Monashee Pass	Canada	4500	3/30	48	17.0	14.2	17.1	13.7**
Mount Kobau	Canada	5950	3/26	23	6.4	11.0	--	--
Muckamuck +	19A9a	6390	4/3	59	20.6	16.8	14.8	--
Mutton Cr. No. 1	19A1	5700	3/30	61	22.3	13.8	9.8	15.3
Mutton Cr. No. 2	19A4	6000	3/30	60	21.1	14.6	13.6	16.4
New Copper Mountain	Canada	4300	3/30	16	5.8	5.3	4.5	4.6**
New Penticton Res.	Canada	5225	3/29	40	11.2	New Course		
Nickel Plate Mtn.	Canada	6200	4/3	32	11.0	5.0	7.4	7.4**
Paysayten +	20A28a	4300	3/30	60	21.0	15.5	15.1	--
Postill Lake	Canada	4500	3/30	29	9.2	7.2	9.6	8.7**
#Quartette Lake	Canada	4000	3/30	46	14.1	14.1	14.8	16.1

\+ Snow water equivalent estimated from aerial stadia observations
\# Not located directly on this drainage
** Average for years of record

APPENDIX 4

DRAINAGE BASIN and SNOW COURSE	No.	Elev.	SNOW COVER MEASUREMENT 1967 Date of Survey	Snow Depth (In.)	Water Content (In.)	Past Record Water Content (In.) 1966	1965	1948-62 Avg.
OKANOGAN RIVER (Cont.)								
Rusty Creek	19A3	4000	3/29	22	7.6	6.6	6.6	8.0
Salmon Meadows	19A2	4500	3/30	40	13.2	8.0	10.1	11.8
Silver Star Mtn.	Canada	6050	3/31	90	36.9	26.0	28.0	23.2**
Starvation Mtn. +	19A10a	6750	4/3	69	24.2	21.0	18.2	--
Summerland Reservoir	Canada	4200	4/1	33	12.0	9.8	9.1	9.0
Trout Creek	Canada	4700	4/1	30	8.7	5.4	7.7	7.8
Upper Esperon Cr.	Canada	5290	Not Measured			19.2	--	--
White Rocks Mtn.	Canada	6000	3/29	75	30.0	22.0	24.6	19.0**
METHOW RIVER								
Billy Goat Pass +	20A10a	6409	3/30	118	41.3	35.5	32.4	--
Dollar Watch +	20A29a	7000	3/30	92	32.2	25.5	24.8	--
Harts Pass	20A5A	6500	3/28	139	53.3	40.5	44.1	49.6*
Horseshoe Basin +	19A5a	7000	3/30	60	21.0	16.6	15.5	--
Loup Loup	19A7	4650	3/30	30	9.4	8.5	8.0	--
#Mutton Creek No. 1	19A1	5700	3/30	61	22.3	13.8	9.8	15.3
#Mutton Creek No. 2	19A4	6000	3/30	60	21.1	14.6	13.6	16.4
#Rusty Creek	19A3	4000	3/29	22	7.6	6.6	6.6	8.0
#Salmon Meadows	19A2	4500	3/30	40	13.2	8.0	10.1	11.8
War Creek Pass +	20A31a	6500	3/30	141	49.4	35.9	--	--
CHELAN LAKE BASIN								
Lyman Lake	20A23A	5900	3/26	186	72.2	55.4	61.0	61.7
Park Creek Ridge	20A12A	4600	3/26	154	54.0	39.5	46.2	48.8
Rainy Pass	20A9	4780	3/27	134	50.1	34.9	41.5	42.5
Safety Harbor	20A30A	6300	3/27	97	33.5	27.5	30.4	--
War Creek Pass +	20A31a	6500	3/30	141	49.4	35.9	--	--
ENTIAT RIVER								
Brief	20B19	1600	3/28	0	0.0	5.1	4.9	--
Entiat Meadows +	20A33a	4800	3/30	142	51.0	--	--	--
Entiat River Trail +	20A34a	3150	3/30	66	24.0	13.4	--	--

\+ Snow water equivalent estimated from aerial stadia observations
\# Not located directly on this drainage
* Adjusted 1948-62 average
** Average for years of record

APPENDIX 5

DRAINAGE BASIN and SNOW COURSE	No.	Elev.	SNOW COVER MEASUREMENT 1967 Date of Survey	Snow Depth (In.)	Water Content (In.)	Past Record: Water Content (In.) :1966	1965	1948-62 Avg.
ENTIAT RIVER (Cont.)								
Fox Camp +	20A36a	6510	3/30	172	62.0	New Aerial Marker		
Pope Ridge	20B20	4300	3/14	48	15.7	17.7	--	--
			3/28	49	17.7	17.2	--	--
Pugh Ridge +	20A32a	6400	3/30	123	44.0	28.3	--	--
Snow Brushy +	20A35a	3850	3/30	133	48.0	31.2	--	--
Tommy Creek +	20B21a	5300	3/30	91	33.0	19.7	--	--
WENATCHEE RIVER								
Berne-Mill Creek	21B23	2925	3/30	75	28.3	25.3	28.1	--
Blewett Pass No. 2	20B2	4270	3/10	32	10.3	--	--	--
			3/20	38	12.5	--	--	--
			3/31	43	12.8	18.1	18.2	18.3
Chiwaukum G. S.	20B16	1810	3/30	16	5.3	12.3	13.5	--
#Fish Lake	21B4	3371	3/11	90	31.6	--	--	--
			3/21	89	33.5	--	--	--
			4/1	89	33.0	32.6	34.8	38.7
Lake Wenatchee	20B5	1970	3/10	32	10.7	--	--	--
			3/20	28	9.6	--	--	--
			3/30	28	9.6	11.8	14.5	--
Leavenworth R. S.	20B17	1127	3/14	0	0.0	6.8	--	--
			3/31	0	0.0	0.0	0.7	--
#Lyman Lake	20A23A	5900	3/26	186	72.2	55.4	61.0	61.7
Merritt	20B18	2140	3/30	22	8.6	16.3	17.9	--
Stevens Pass	21B1	4070	3/15	145	50.8	48.0	59.0	50.4*
			3/30	160	58.8	46.3	60.8	55.4
SQUILCHUCK CREEK								
Beehive Springs	20B3	4400	3/31	15	3.0	10.3	9.2	9.0*
Scout-A-Vista	20B4	3400	3/31	13	1.5	8.5	7.8	7.6*
STEMILT CREEK								
Jump-Off	20B8	4450	3/31	19	3.2	10.8	7.6	--
Stemilt Slide	20B6	5000	3/31	42	11.3	15.2	12.8	--
Upper Wheeler	20B7	4400	3/31	15	2.1	10.6	7.4	--

\+ Snow water equivalent estimated from aerial stadia observations
\# Not located directly on this drainage
* Adjusted 1948-62 average

APPENDIX 6

DRAINAGE BASIN and SNOW COURSE			SNOW COVER MEASUREMENT 1967 Date of Survey	Snow Depth (In.)	Water Content (In.)	Past Record Water Content (In.) 1966	1965	1948-62 Avg.
YAKIMA RIVER								
#Ahtanum R. S.	21C11	3100	3/27	0	0.0	9.5	5.5	5.6*
Big Boulder Creek	21B9	3200	3/12	34	9.7	--	--	--
			3/21	36	13.1	--	--	--
			4/2	35	12.1	20.4	19.6	22.3
#Blewett Pass No. 2	20B2	4270	3/10	32	10.3	--	--	--
			3/20	38	12.5	--	--	--
			3/31	43	12.8	18.1	18.2	18.3
Bumping Lake	21C8	3450	3/17	42	13.4	19.6	17.8	20.5*
			3/30	37	13.2	19.8	16.3	19.3
#Cayuse Pass	21C6	5300	4/1	246	100.8	88.6	83.3	96.2
Clockum Pass	20B9	5370	3/31	57	16.2	16.5	16.7	--
Cooke Creek	20B10	4123	3/31	0	0.0	7.6	7.1	--
Cooper Pass	21B36	3300	3/9	77	27.6	New Course		
			3/20	84	32.4	--	--	--
			3/30	85	32.0	--	--	--
#Corral Pass	21C13	6000	4/1	123	47.6	40.8	43.0	45.7
Fish Lake	21B4	3371	3/11	90	31.6	--	--	--
			3/21	89	33.5	--	--	--
			4/1	89	33.0	32.6	34.8	38.7
Green Lake	21C10	6000	3/27	111	43.5	39.0	32.0	33.8*
Grouse Camp	20B11	5385	3/31	55	13.7	18.8	--	--
High Creek	20B12	2930	3/31	0	0.0	0.0	--	--
Hyak	21B34	2600	3/9	46	17.4	New Course		
			3/20	45	19.7	--	--	--
			3/30	52	20.4	--	--	--
Kachess Dam	21B38	2200	3/9	7	2.0	New Course		
			3/20	0	0.0	--	--	--
			3/30	0	0.0	--	--	--
Kachess Peninsula	21B37	2280	3/9	40	14.4	New Course		
			3/20	33	12.0	--	--	--
			3/30	33	11.6	--	--	--
Lake Cle Elum	21B14M	2200	3/10	0	0.0	--	--	--
			3/15	Not Measured		12.4	4.8	--
			3/20	0	0.0	--	--	--
			4/1	0	0.0	10.7	4.0	8.1

\# Not directly on this drainage
* Adjusted 1948-62 average

APPENDIX 7

DRAINAGE BASIN and SNOW COURSE	No.	Elev.	SNOW COVER MEASUREMENT 1967 Date of Survey	Snow Depth (In.)	Water Content (In.)	Past Record Water Content (In.) 1966	1965	1948-62 Avg.
YAKIMA RIVER (Cont.)								
Manashtash	20C1	3935	3/30	0	0.0	6.2	0.0	--
Morgan Creek	21B40	2320	3/9	0	0.0	New Course		
			3/20	0	0.0	--	--	--
			3/30	0	0.0	--	--	--
Morse Lake	21C17	5400	3/30	171	76.0	75.3	65.0	66.8*
Nanum	20B13	3875	3/31	0	0.0	10.3	--	--
#Olallie Meadows	21B2	3625	3/10	115	41.7	--	--	--
			3/20	111	45.6	--	--	--
			3/30	130	50.8	55.8	59.3	56.5
Salmon La Sac	21B39	2340	3/9	43	14.0	New Course		
			3/20	47	17.2	--	--	--
			3/30	39	12.2	--	--	--
#Satus Pass	20D1	4030	3/30	8	2.7	18.9	11.2	--
Snoqualmie Pass	21B33SP	3020	3/23	72	32.0	New Course		
#Stampede Pass	21B10	3000	3/10	123	48.6	--	--	--
			3/17	124	46.0	40.5	46.8	50.1*
			3/31	139	52.2	43.1	49.5	52.9*
Trail Creek	20B14	3360	3/31	0	0.0	0.0	0.0	--
Tunnel Avenue	21B8	2450	3/10	46	14.5	--	--	--
			3/15	Not Measured		26.0	28.1	29.6*
			3/20	44	16.2	--	--	--
			3/30	51	17.3	25.4	28.4	29.3
Walters Flat	20B15	3360	3/31	0	0.0	6.3	--	--
White Pass (E. Side)	21C28	4500	3/15	74	23.1	24.7	26.6	26.3*
			3/29	74	24.6	25.0	29.4	31.0*
White Pass (Leech L.)	21C27	4500	3/15	93	32.4	31.4	37.1	--
			3/31	98	34.8	32.7	34.4	--
AHTANUM CREEK								
Ahtanum R. S.	21C11	3100	3/27	0	0.0	9.5	5.5	5.6*
#Green Lake	21C10	6000	3/27	111	43.5	39.0	32.0	33.8*
L O W E R C O L U M B I A D R A I N A G E								
ASOTIN CREEK								
Spruce Springs	17C4	5700	3/29	62	22.1	28.4	34.8	--

\# Not located directly on this drainage
* Adjusted 1948-62 average

APPENDIX 8

DRAINAGE BASIN and SNOW COURSE	No.	Elev.	SNOW COVER MEASUREMENT 1967 Date of Survey	1967 Snow Depth (In.)	1967 Water Content (In.)	Past Record Water Content (In.) 1966	1965	1948-62 Avg.
MILL CREEK								
Homestead	17C1	4030	3/30	21	7.1	15.2	9.1	8.0*
Martin Springs	17C2	4400	3/30	38	12.6	20.2	17.3	17.2*
Walla Walla Diversion	18D13	2400	3/27	0	0.0	0.0	0.0	0.0*
KLICKITAT RIVER								
Satus Pass	20D1	4030	3/30	8	2.7	18.9	11.2	--
West Fork Cabin	21C15	3000	Not Measured			15.7	9.9	--
WHITE SALMON RIVER								
Cultus Creek	21C12	4000	3/29	134	51.6	59.6	50.8	54.0
#Surprise Lakes	21C13A	4250	3/29	145	58.3	60.0	53.8	58.8
WIND RIVER								
Old Man Pass	21D19	3100	3/30	56	18.7	38.7	26.1	19.7*
LEWIS RIVER								
Blue Lake +	21C22a	4800	4/1	203	79.1	--	78.1	--
Bob's Trail	21C21	2200	3/28	41	18.0	25.9	--	--
Calamity Ridge +	22D1a	2500	4/1	23	8.0	15.7	1.4	--
Council Pass +	21C18a	4200	4/1	124	47.1	53.5	43.2	43.9*
#Cultus Creek	21C12	4000	3/29	134	51.6	59.6	50.8	54.0
Divide Meadow +	21C29a	5600	4/1	160	61.9	60.0	58.5	--
Grand Meadow	21C25	3500	3/28	75	29.6	35.2	31.0	--
Lone Pine Shelter	21C26	3800	4/1	126	49.6	63.5	42.8	--
Marble Mountain +	22C3a	3200	4/1	124	52.0	63.5	37.2	--
#Mosquito Meadows	21C19	4100	4/1	129	50.0	63.4	48.3	50.0*
New Muddy River	22C6	1400	4/1	0	0.0	22.1	8.0	--
Old Man Pass	21D19	3100	3/30	56	18.7	38.7	26.1	19.7*
Plains of Abraham +	22C1a	4400	4/1	201	78.4	--	62.4	75.9
Smith Creek Road	22C4	2100	4/1	40	18.8	33.2	21.0	--
Spencer Meadow +	21C20a	3400	4/1	80	32.0	49.1	22.0	--
Surprise Lakes	21C13A	4250	3/29	145	58.3	60.0	53.8	58.8

\+ Snow water equivalent estimated from aerial stadia observations
\# Not located directly on this drainage
* Adjusted 1948-62 average

APPENDIX 9

DRAINAGE BASIN and SNOW COURSE	No.	Elev.	SNOW COVER MEASUREMENT 1967 Date of Survey	1967 Snow Depth (In.)	1967 Water Content (In.)	Past Record Water Content (In.) 1966	1965	1948-62 Avg.
LEWIS RIVER (Cont.)								
Table Mountain +	21C24a	4200	4/1	141	55.0	59.1	49.5	--
Timbered Peak +	21D18a	3000	4/1	73	29.9	38.8	7.2	--
COWLITZ RIVER								
Cayuse Pass	21C6	5300	4/1	246	100.8	88.6	83.3	96.2
Mosquito Meadows	21C19	4100	4/1	129	50.0	63.4	48.3	50.0*
Ohanapecosh	21C32	2200	3/30	35	13.6	22.7	20.4	--
Packwood Lake	21C31	2870	3/31	38	14.2	20.3	13.9	--
Pigtail Peak	21C33	5900	3/31	187	70.2	55.2	68.5	--
Plains of Abraham +	22C1a	4400	4/1	201	78.4	--	62.4	75.9
Potato Hill	21C14	4500	4/1	89	32.4	42.6	34.4	35.0*
#White Pass (E. Side)	21C28	4500	3/15	74	23.1	24.7	26.6	26.3*
			3/29	74	24.6	25.0	29.4	31.0*
#White Pass (Leech L.)	21C27	4500	3/15	93	32.4	31.4	37.1	--
			3/31	98	34.8	32.7	34.4	--
Willame Creek	21C30	3250	4/1	97	38.0	42.2	38.7	--
PUGET SOUND DRAINAGE								
NISQUALLY RIVER								
Ghost Forest	21C4	4550	3/24	143	56.2	49.8	48.5	53.4*
Longmire	21C3	2760	3/24	40	14.2	16.2	14.7	11.1*
New Paradise Park	21C35	5500	3/24	205	83.2	63.4	--	--
Stem Glade	21C1	5050	3/24	212	82.4	65.6	73.0	80.2*
WHITE RIVER								
#Cayuse Pass	21C6	5300	4/1	246	100.8	88.6	83.3	96.2
Corral Pass	21C13	6000	4/1	123	47.6	40.8	43.0	45.7*
#Morse Lake	21C17	5400	3/30	171	76.0	75.3	65.0	66.8*
White River Campground	21C34	4000	4/3	79	33.1	32.6	--	--
GREEN RIVER								
Airstrip	21B24	1800	4/1	0	0.0	0.0	0.0	--
Charley Creek	21B25	1200	3/30	0	0.0	0.0	0.0	--

\# Not directly on this drainage
* Adjusted 1948-62 average
\+ Snow water equivalent estimated from aerial stadia observations

APPENDIX 10

DRAINAGE BASIN and SNOW COURSE	No.	Elev.	SNOW COVER MEASUREMENT 1967 Date of Survey	Snow Depth (In.)	Water Content (In.)	Past Record Water Content (In.) :1966	1965	1948-6 Avg.
GREEN RIVER (Cont.)								
Grass Mtn. No. 1	21B26	4000	3/30	79	26.5	34.0	28.0	--
Grass Mtn. No. 2	21B27	2900	3/30	70	22.5	35.7	27.3	--
Grass Mtn. No. 3	21B28	2100	3/30	8	2.2	5.2	0.0	--
Lester Creek	21B29	3100	4/1	74	25.4	30.0	28.0	--
Sawmill Ridge	21B29	4700	4/1	122	46.8	38.8	48.2	--
Twin Camp	21B30	4100	4/1	71	30.2	26.6	35.5	--
Stampede Pass	21B10	3000	3/10	123	48.6	--	--	--
			3/17	124	46.0	40.5	46.8	50.1
			3/31	139	52.2	43.1	49.5	52.9
CEDAR RIVER								
City Cabin	21B3	2390	3/29	46	15.6	25.4	25.4	21.6
Mt. Gardner	21B21	3300	Not Measured			27.0	22.0	--
Mt. Lindsay	21B16	2500	3/27	50	15.2	28.3	21.5	19.2
Mt. Washington	21B15	3000	3/28	28	7.7	21.0	4.4	8.2
Rex River	21B17	2400	3/30	44	14.7	26.9	36.9	22.7
S. F. Cedar	21B6	3000	3/29	60	19.6	29.0	23.3	29.5
Tinkham Creek	21B20	3400	3/29	56	18.7	35.0	28.9	--
SNOQUALMIE RIVER								
Bandera Air Strip	21B32	1635	3/10	0	0.0	New Course		
			3/20	0	0.0	--	--	--
			3/30	0	0.0	--	--	--
#Lake Elizabeth	21B19	2900	3/31	130	53.4	61.6	54.1	--
Olallie Meadows	21B2	3625	3/10	115	41.7	--	--	--
			3/20	111	45.6	--	--	--
			3/30	130	50.8	55.8	59.3	56.5
S. F. Tolt	21B18	1900	3/27	0	0.0	0.0	0.0	--
SKYKOMISH RIVER								
Lake Elizabeth	21B19	2900	3/31	130	53.4	61.6	54.1	--
#Stevens Pass	21B1	4070	3/15	145	50.8	48.0	59.0	50.4
			3/30	160	58.8	46.3	78.5	55.4

\# Not directly on this drainage
* Adjusted 1948-62 average
\+ Snow water equivalent estimated from aerial stadia observations

APPENDIX 11

DRAINAGE BASIN and SNOW COURSE	No.	Elev.	SNOW COVER MEASUREMENT 1967 Date of Survey	Snow Depth (In.)	Water Content (In.)	Past Record Water Content (In.) 1966	1965	1948-62 Avg.
SKAGIT RIVER								
Beaver Creek Trail	21A4	2200	3/28	42	16.7	18.6	15.3	15.5
Beaver Pass	21A1	3680	3/28	105	40.3	40.0	29.8	38.4
Devils Park	20A4	5900	3/27	150	55.9	39.7	44.2	47.5*
Freezeout Cr. Trail	20A1	3500	3/28	47	15.2	13.6	14.3	15.0
Freezeout Meadows	20A2	5000	3/28	97	34.7	34.5	34.2	35.6
#Harts Pass	20A5A	6500	3/28	139	53.3	40.5	44.1	49.6*
Klesilkwa	Canada	3700	3/28	62	18.8	11.7	12.0	16.4
Lake Hozomeen	21A2	2600	3/28	27	7.8	12.2	11.5	12.1*
#Lyman Lake	20A23A	5900	3/26	186	72.2	55.4	61.0	61.7
Meadow Cabins	20A8	1900	3/27	17	6.3	5.1	12.4	8.5
New Tashme	Canada	2500	3/31	30	11.1	9.6	13.4	11.6
Quartette Lake	Canada	4000	3/30	46	14.1	14.1	14.8	16.1*
#Rainy Pass	20A9	4780	3/27	134	50.1	34.9	41.5	42.5
Thunder Basin	20A7	4200	3/27	78	25.6	22.9	24.5	28.1
BAKER RIVER								
Dock Butte	21A11A	3800	3/15+	207	83.3	--	61.1	--
			3/29	228	87.8	78.1	66.4	--
Easy Pass	21A7A	5200	3/15+	218	88.3	--	73.4	--
			3/30	259	104.3	89.3	82.6	--
Jasper Pass	21A6A	5400	3/15+	261	106.5	--	72.7	--
			3/30	297	116.2	95.3	84.1	--
Komo Kulshan	21A17	800	3/29	7	2.6	12.7	9.8	--
Marten Lake	21A9A	3600	3/15+	234	94.8	--	74.4	--
			3/30	246	97.2	89.3	74.8	--
Mount Blum +	21A18a	5800	3/15	202	81.8	--	80.0	--
#Panorama	21A5	4300	3/12	226	91.5	77.8	74.3	--
			3/29	260	104.0	100.8	76.4	--
Rocky Creek	21A12A	2100	3/15+	94	40.9	33.2	29.2	--
			3/29	108	42.6	44.0	36.2	--
Schreibers Meadow	21A10A	3400	3/15+	152	61.6	65.1	55.9	--
			3/29	202	81.6	75.6	60.6	--
S. F. Thunder Cr.	21A14A	2200	3/15+	8	3.2	--	8.0	--
			3/29	29	10.4	8.9	1.9	--
Sulphur Creek	21A13	1600	3/29	40	15.1	21.6	18.6	--
Three Mile Creek	21A8A	4500	3/30	3	0.7	3.6	0.0	--
Watson Lakes	21A8A	4500	3/15+	187	75.7	60.9	65.4	--
			3/29	229	81.7	75.2	68.5	--

* Adjusted 1948-62 average
\+ Snow water equivalent estimated from aerial stadia observation
\# Not located directly on this drainage

APPENDIX 12

DRAINAGE BASIN and SNOW COURSE	No.	Elev.	SNOW COVER MEASUREMENT 1967 Date of Survey	Snow Depth (In.)	Water Content (In.)	Past Record Water Content (In.) 1966	1965	1948-62 Avg.
NOOKSACK RIVER								
Bald Mountain +	21A19a	4400	3/31	183	65.0	New Aerial Marker		
Glacier Creek	21A23	3700	3/31	90	32.0	New Course		
Panorama	21A5	4300	3/12	226	91.5	77.8	74.3	--
			3/29	260	104.0	100.8	76.4	--
OLYMPIC PENINSULA								
DUNGENESS RIVER								
Deer Park	23B4	5200	3/30	88	31.3	--	22.0	29.7*
MORSE CREEK								
Deer Park G. S.	23B13	4850	3/30	55	18.8	--	14.0	--
Morse Creek	23B12	5425	3/29	164	64.0	55.2	35.9	--
ELWHA RIVER								
Hurricane	23B3	4500	3/27	100	35.0	34.6	23.4	33.1*
SKOKOMISH RIVER								
Black & White	23B7	4200	4/1	152	61.8	66.2	39.8	51.3*
Black & White Lakes	23B6	4700	4/1	192	86.5	84.8	49.4	71.3*
Four Streams	23B10	3000	3/31	119	45.0	54.7	29.6	--
Home Sweet Home	23B5	5200	4/1	229	102.0	90.8	63.8	87.0*
Sundown Pass	23B8	3900	4/1	203	81.4	91.7	57.6	--

* Adjusted 1948-62 average
\+ Snow water equivalent estimated from aerial stadia observations

Agencies Assisting with Snow Surveys

GOVERNMENT AGENCIES

Canada:

Department of Lands, Forests and Water Resources,
Water Resources Service, British Columbia

States:

Washington State Department of Conservation
Washington State Department of Natural Resources

Federal:

Department of the Army
    Corps of Engineers
U. S. Department of Agriculture
    Forest Service
U. S. Department of Commerce
    Weather Bureau
U. S. Department of the Interior
    Bonneville Power Administration
    Bureau of Reclamation
    Geological Survey
    National Park Service

PUBLIC AND PRIVATE UTILITIES

Chelan County P.U.D.
Pacific Power and Light Company
Puget Sound Power and Light Company
Washington Water Power Company

OTHER PUBLIC AGENCIES

Okanogan Irrigation District
Wenatchee Heights Irrigation District

MUNICIPALITIES

City of Walla Walla
City of Tacoma
City of Seattle

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.

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